MOUNT ALLISON UNIVERSITY

ENVIRONMENTAL AUDIT



2011

Table of Contents

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Introduction

The 2011 Environmental Audit marks the sixth in a sequence of reports put forth by Mount Allison University since 1998. Historically conducted every two or three years by a small group of students, the Audit aims to take a cradle to grave approach to assess ways in which Mount Allison interacts with the environment. This is interpreted to include physical and social impacts of the University as a whole on local surroundings as well as having a role in the greater global system. Located in Sackville, NB with a campus community comprising of approximately 3000 members, the rural, intimate environment of the University and the town means that the effects of actions cannot be ignored. While the term 'environmentalism' can often be met with scepticism and unease, one could argue that Mount Allison's small size and active student body put it in a perfect position to establish itself as a strong proponent, if not a leader, of environmental sustainability.

For every way in which the University impacts its environment there appears to be a different extent to which this impact is felt. There are varying degrees of success, and the path of environmental sustainability is no different. Previous Audits have highlighted many individual efforts that need to be recognized, but a lack of overall commitment by the institution. As awareness regarding climate change and global warming increases, many universities are recognizing that they have a role to play. Recent years have shown widespread interest on the part of institutions for environmental policies, sustainability coordinators and offices, and a host of other initiatives that are aimed at reaching a balance.

The Audit is not meant to be viewed as a final report but rather a tool for the future. It is often easiest to act as an individual, whether as a student, an academic department, or an advisory group; however, this mentality limits opportunities for active collaboration. Environmental sustainability may not be the easiest term to define or conducive to the simplest decisions, but it is a choice that simply makes sense for the future of a planet we are a part of. As Mount Allison University strives to develop well-rounded students and leaders, the institution as a whole needs to consider how its practices, policies and people are perceived and its values are upheld as it exists within its environment.

We hope this audit gives all readers a clearer picture of sustainability at Mount Allison and teaches them as much about this institution as we have learned over this past summer.

Happy reading,

The 2011 Auditing Team: Naomi Martz, Kate Ritchie, Caitlyn Schwaer

Executive Summary

This summer marked the sixth Environmental Audit conducted by Mount Allison University. The past audits have highlighted the University's increasing focus on sustainability and interest in reducing its environmental footprint. They have further served as a valuable tool in outlining areas for improvement, and providing recommendations about strategies and ideas to do so. While much progress has been made since the previous audit, the rates at which our local and global environments are changing require that institutions such as Mount Allison continue to act with the environment as a fundamental priority at all levels.

The approach to this year's audit emphasized the need for consistency with the previous audit in order to more easily and effectively gauge the University's progress since 2008. Though efforts were made to adhere to the same structure as the most recent audit, ineffective indicators were removed, and suggestions were made for amendments to the Environmental Policy. The following pages provide a brief summary of each chapter.

Stewardship

Campus-wide excitement for environmentalism reached its height in the 2008-2009 Year of the Environment, and the passing of the Emissions Reduction Policy in April 2009. Though sustainability remains a key value at all levels of the institution, potentially useful initiatives such as the Environmental Issues Committee have begun to lose their effectiveness, and are in dire need of an update to address the present day needs of the institution. Likewise, the Environmental Policy itself has not seen any updates since its passing in 1998, and should be re-evaluated to ensure relevancy. The biggest challenge facing the institution is communication, as many environmental projects are infrequently communicated internally or externally. However, since 2008 the University community has implemented several note-worthy initiatives such as the Green Evolving Fund and a Green Investment Fund administered by the SAC. There has also been increased involvement between the University community and the Town of Sackville.

Curriculum

Since the 2008 Audit, there have not been any significant changes regarding environmental content in courses. However, the Geography and Environment department has experienced a substantial increase in course enrolment signifying growing student interest in environmental subject matter. There remain numerous courses across disciplines in the academic calendar which contain environmental content or themes. The Geography and Environment department is in the process of developing a Master's degree in Environmental Science, as well as a Sustainable Planning major degree program. In the past three years there have been a number of environmental speakers hosted by Mount Allison, and an addition to environmental academic resources such as a $10,000 addition to the Geography and Environment collection in the library.

Paper

Though the University lacks any campus-wide paper policy, paper consumption has declined steadily as a result of departmental and individual initiative. The increased use of Moodle has played a significant role in the reduction of paper use among students and faculty. The University has recently switched to the use of SFI Certified paper, and recycled paper continues to be available upon request at the University Print Shop. However, the University should address the possibility of using paper with post-consumer recycled content, in addition to further reducing its overall paper use.

Food

The dining hall diet has gone unchanged since the 2008 audit. Vegetarian options remain available at all meal times; Dining Services works to accommodate student needs and integrate student opinions. Waste practices likewise remain very much the same, though some measures have been taken to reduce the total waste going to landfill. Dining Services is investigating further waste reduction options, and are currently looking at different units to compact and reduce waste

quantities. Dining Services sources 40% of their food locally, although there is some uncertainty as to what 'local' encompasses. Though they work to serve food in season, financial restrictions continue to restrict the use of organic ingredients. One of the most significant developments since the previous audit is the establishment of a University farm during the summer of 2011. Though it is too early to judge the success of this initiative, the farm has the potential to be a valuable resource for community collaboration, experiential learning and a greater understanding of and connection to the food we eat.

Solid Waste

Although the Wet/Dry system used at Mount Allison has been in place for several years now and thus most staff and faculty are accustomed to it, understanding how it works still presents a challenge for students from out of county. The absence of educational efforts on the part of the University in recent years leads to improper sorting and unnecessary waste destined for the landfill. Since the previous audit, Mount Allison is more directly in control of its own waste, as garbage is no longer brought to a Sackville transfer station. Efforts have been made to increase landfill diversion and encourage waste reduction, such as the implementation of centralized sorting bins. However, many of these efforts have not been communicated to the University community therefore limiting the success of these projects.

Hazardous Waste

Hazardous materials are dealt with responsibly and in accordance with federal and provincial regulations. All departments that deal with hazardous materials on a regular basis are making an effort to store and dispose of hazardous waste in a more environmentally friendly way. There can always be some room for improvement in terms of seeking out the most environmentally friendly methods and materials, as well as reducing quantities used. While the monthly safety audits could be completed on schedule more often, overall the University has good practices when it comes to dealing with hazardous materials.

Grounds

The Grounds Department continually works to incorporate environmental considerations into its practices. Grounds aims to minimize pesticide and water use, as well as to ensure the campus landscape requires low costs, low maintenance, and is low risk to all users during all seasons. The incorporation of Groundskeeping into all of the environmental audits at Mount Allison indicates the significant role of this department, and thus it is time that it either be incorporated into the Environmental Policy, or else held accountable through a Grounds-specific policy.

New Buildings and Renovations

In Mount Allison's planned development of the new Fine and Performing Arts Centre they have chosen to pursue Green Globes certification, seeing it to be a more suitable metric for the University both in terms of the implementation of the standard and the cost of the certification process itself. The University further tries to implement green building features when carrying out any renovations, such as heat recovery in ventilation systems, double glazed windows and low flow toilets. However, it is just as important to build in an environmentally friendly manner as it is to ensure existing buildings are well maintained and as efficient as possible. Yet since the 2008 Audit Mount Allison has continued to struggle to keep up with its deferred maintenance list, which grows far faster than its budget.

Energy

Since the 2008 Audit, Mount Allison has taken some significant steps to reduce its energy consumption. Three out of four boilers in the heating plant have been converted to run natural gas, rather than bunker A heavy oil. Most building renovations incorporate energy efficient technologies and seek to reduce buildings consumption of energy and resources. The new Green Evolving Fund has already, and will continue to, play an integral role in allowing Facilities Management to continually update and improve the efficiency of all University buildings.

Water

There have been several significant developments since 2008 regarding water use at Mount Allison. All residences have been equipped with efficient water fixtures, such as low-flow toilets, showerheads and tap aerators. They have also been inventoried to assist in future projects. However, Academic buildings have not yet been given the same treatment. The University has further voluntarily installed a backflow prevention system. One of the most significant actions now is to communicate the importance of water-saving practices, as well as to raise awareness about the positive changes to University infrastructure in order to ensure awareness and conscious use by all campus members.

Transportation

Mount Allison has begun the shift towards pursuing the purchase of more fuel efficient, and lower-emission vehicles. Although the University could benefit from a University-wide Vehicle Policy, department initiatives are beginning to implement changes to vehicle use at Mount Allison: Facilities Management has very recently implemented a no-idling policy for its fleet vehicles. That being said, the University still has some progress to be made regarding transportation. Only a few residences are equipped with bike racks, deterring on-campus students from bringing or using their bikes in Sackville. Moreover, Mount Allison's does not have either a carpooling board or website in use.

Emissions

The need to address the emissions of the University has arguably received the most attention since the previous audit. In 2009 the University developed the Emission Reduction Policy, and has been calculating the yearly carbon footprint since that time. While there has been yearly variation regarding what is included in the measurement of the footprint, Financial Services seems committed to continually improving the process which should make for more solid and reliable data in the coming years. However, the University has failed to set any reduction targets by the deadlines it had set out for itself in the Emission Reduction Policy. If any real progress is to be made, the University must adhere to its own policies – even if the road to doing so is challenging and involves some degree of guesswork.

Procurement

Procurement at Mount Allison has undergone positive changes since the previous audit. The addition of an Environmentally Aware Procurement clause to the existing Procurement Policy is beginning to bring changes to the types of products and services purchased by the University. Moreover, the movement towards e-Procurement on online Purchasing Orders have had a positive impact on reducing paper use. The key now is to ensure that all campus members are adequately educated about the impacts of products they – and the institution – are using, and that they are properly informed of their product options upon purchase.

Methodology

The Mount Allison 2011 Environmental Audit (the Audit) is based on Policy 2101 and on Policy 2102, the Emissions Reduction Policy and Environmental Policy respectively. These policies are meant to guide the University towards environmental sustainability. Chapter topics were chosen based on sections within the policies and their inclusion in the previous audits. Performance indicators within the chapters were chosen in the same manner.

The Audit was conducted using interviews, survey questionnaires, facility tours, Mount Allison records, reports, documents and previous audits. Unique questions were created for each interviewee. Individuals who were most able to provide an informed assessment in each area of the Audit were selected for interview. The questions were mainly qualitative in nature and were relevant to the individual's primary responsibilities. Survey questionnaires were only used when twenty or more individuals needed to be consulted for one chapter. Again, the questions were qualitative in nature and were relevant to the individual's primary function at the University. Facility tours were conducted to help the auditors gain a more in-depth understanding of the topics being audited. Official records, reports and documents were used to collect quantitative and qualitative data. Previous audits were consulted to help develop questions, to provide a format in which to present the Audit and as tool to measure the University's progress on its commitment to environmental sustainability.

Recommendations were based on recommendations from previous audits, recommendations from interviewees, questionnaires and industry trends. They were then made based on ease of implementation, cost of Implementation and urgency in terms of required action to move forward on sustainability agenda.

Recommendations are either short-term or long-term. Short-term are tasks that can be achieved by the next Environmental Audit in 2013. Long-term are tasks that can be achieved by the creation of the next Strategic Statement in 2016 or that require the completion of a short-term task as a pre-requisite.

Strengths

- Three individuals worked as a team full time on the audit over a three month period.
- Various survey methods were used.
- More than 25 people were interviewed and many more were surveyed.
- Previous audits provided a framework for structure, content and approach.

Limitations

- The number of faculty, staff and students on campus is limited during the summer months.
- Auditors do not have formal audit training (i.e. Certified Environmental Auditor from the Auditing Association of Canada).
- Information was primarily based on what was readily provided and recorded. Further direction on topics to pursuit was largely contingent on suggestions from interviewees.

Glossary

Environment – ecological surroundings affecting a given organism at anytime

Sustainability – "human activities that meet the needs of the present without compromising the ability of future generations to meet their own needs" – Brundtland Commission (1983) This is achieved by balancing social, economic and environmental dimensions. For the purpose of this audit this term is used synonymous to the environmental dimension.

Campus community members – includes all staff, faculty, student and individuals and groups using the Mount Allison facility.

Stewardship

Definition: "Responsibility shared by all to wisely manage our land and resources, and our responsibility to future generations for the condition of that resource when we leave it"

Introduction

The 2008 Audit reported that the environment at Mount Allison had been "imbued with a new energy at all levels." Since that time the University has adopted several progressive initiatives and has worked towards fostering a culture in which the environment is embraced as a central value at all levels and in all departments. Individuals across campus stress the importance of seeing environmental consciousness as the responsibility of the entire University community; something to be taken into consideration by everyone, rather than being designated as the responsibility of a single individual or department.

Mount Allison has witnessed a shift towards a much more holistic view of environmental responsibility, with initiatives spearheaded by both grass roots groups, senior administration and the municipality. There is an increasing collaboration between students, staff, faculty, and the Town of Sackville.

While the University has made significant progress in many areas, there remains room for improvement, and many areas in which environmental commitments could be strengthened. It is important to give credit where credit is due and acknowledge successes. Yet we must remember that environmental sustainability is not an end-goal, but rather a continuous process; our actions both as individuals and as an institution should therefore reflect a continuous, ever-growing commitment to environmental responsibility.

Facilities and Administration

Indicator #1: Executive Support: the environment is expressed as a strategic priority in University planning, budgeting, fundraising, etc.

The environment was outlined as a key pillar in the Strategic Statement released with the arrival of the new University President in 2006. As a result, the academic year 2008-2009 was designated the Year of the Environment. This was accompanied by the year-long President's Speaker Series on Climate Change and Global Citizenship which brought a number of reputable and knowledgeable presenters to campus.

Launched in 2004, the JUMP Campaign is likely to wrap up within the coming year, as it is projected to meet its target of $86 million well in advance of its scheduled end date in 2014. "Investing in Stewardship" and the Greening of Mount Allison is outlined as one of the three key priorities encompassed by this comprehensive campaign. However, at the time of this Audit only a small amount of funds have been allocated to environmental initiatives.

Indicator #2: Commitments

Sub-Indicator 1: Internal - The University has a written Environmental Policy to ensure the environment remains a priority despite turn-over, limited funds, or competing priorities

Mount Allison University has an Environmental Policy (MTA Policy 2101) that was adopted in 1999. Although this policy encourages environmental responsibility on campus and provides the frame work for this Audit, several of the indicators and references are out-dated, and many are now ineffective measures of progress. Furthermore, the policy lacks any form of accountability; nothing binding exists to ensure the University is moving forward with the policy's aims. The document is in need of an update to reflect the needs, issues, and technologies of the present day.

In 2009, the University adopted an Emissions Reduction Policy (MTA Policy 2102). The policy outlines specific strategies to reduce emissions resulting primarily from transportation, heating and electricity. One of the most significant features of this policy is the requirement to calculate the University's yearly carbon footprint and report it in the Annual Review of Operations, which is presented to the Board of Regents (please refer to 'Emissions' chapter for information on this). Although the policy requires baselines to have been established by April 30, 2010, and interim targets by December 31, 2010, these have not yet been created. This seems to be the result of confusion regarding exactly whose responsibility this is, as well as uncertainty about how to calculate reasonable targets and baselines; it has been implied that without an idea of how to do it 'well' it simply has not been done at all, and thus currently remains a work in progress. Though it is understandable that the University wants to generate realistic targets, this cannot be used an excuse for violating the dictates of the policy; it is important that Mount Allison adheres to the goals it has set out for itself and sets targets soon.

Sub-Indicator 2: External- The University has demonstrated its support by publicly signing a declaration

As mentioned in the two previous audits, Mount Allison is party to the New England Governors and Eastern Canadian Premiers Climate Action Plan.

However, the University has not signed the Talloires Declaration, which has been signed by over 350 universities around the world, including 37 Canadian universities, many of those in Atlantic Canada. Despite its proclaimed support for environmental endeavours, Mount Allison has yet to sign on to this. The auditors feel that signing such a declaration is significant as it is a means of holding the University externally accountable for its commitment to the environment. Moreover, it publically affirms the University's commitment and indicates institutional support for the development of more sustainable university's around the world (Appendix 1.1).

It should be noted that University President Dr. Robert Campbell wrote and signed on to the *Association of Atlantic Universities President's Statement on Climate Change* in November 2010 (Appendix 1.2). This is a general commitment which is designed to be broad enough to allow for individual initiative amongst the universities while also providing some form of united framework for environmental responsibility at institutions in Atlantic Canada. At the time of this audit, nothing related to this document had been implemented at Mount Allison, and it had not yet been publicized within the University.

Indicator #3: New or continuing initiatives, and resources to encourage participation and support

In May 2010, Mount Allison created the Green Evolving Budget. This was established based on the financial mechanisms suggested in the Emissions Reduction Policy. The policy calls for the establishment of a green budget using the savings that result from building renewal/renovation and deferred maintenance projects to be used exclusively to pay for energy efficiency projects or portions of projects.

Money is spent to increase efficiency and reduce energy consumption. As an evolving budget, new funding arises from the savings derived from implementing such Facility Improvement Measures (FIMs) that increase efficiency and therefore generate financial savings. The savings are used to increase the GEB. Facilities Management augments the GEB with external funding sources, such as government funding through Efficiency New Brunswick. Because the GEB can only be used for the cost of the project itself, external funding provides FM the ability to conduct energy audits, assessments and inventories to assist in determining which projects should go forward, and what these should encompass.

Projects are decided upon by Facilities Management and developed with the aid of consultants such as Siemens Building Technologies and are then presented to the Environmental Issues Committee for input. FM has employed a progressive energy management strategy, meaning that in the initial years of the fund, emphasis is placed on implementing projects with a rapid payback in order to build up the budget and establish a strong financial

foundation. Once sufficient funds exist in the account, projects that are more capital-intensive or have a longer-payback or encompass promotional/behavioural change can be considered.

Although payback is the primary consideration, project selection criteria also includes: confidence/reliability in the FIM technology, return on investment (considering incentives, project development and implementation costs), the green budget balance and long term strategy, deferred maintenance priorities, promotional or marketing value, ability to measure and verify performance, annual savings or one time savings.

Budgets are administered and accounted for separately between the Residence and Academic project cost centres. In the first year (2010-2011), the Academic cost centre had initial funding of $200,000, and the Residence cost centre had initial funding of $120,000.

In its first year the GEB projects included:

- Conversion of the 400HP boiler to natural gas
- Ventilation in the Library and Convocation Hall
- Ventilation in Campbell, Jennings and Harper
- Flemington Growth Chamber lighting
- Convocation Hall lighting

Combined, these projects have an average payback of 2.7 years. They were projected to save 816.10 metric tonnes of CO_2 from being emitted into the atmosphere, 2879 GJ of oil and gas, and 607,806 kWh of electricity. Most significantly, from the first year's projects alone, the school was expected to save $142,550 to be injected back into the Green Evolving Budget. Due to unexpected savings, largely as a result of the natural gas conversion, the University has approximately $396,000 for the Academic Cost Centre and $267,000 for the Residence Cost Centre to be used for projects in the 2011-2012 year.

Indicator #4: Institutional and Structural Framework to enforce policy and strengthen future initiatives

The Environmental Issues Committee has remained active since the previous audit. This committee is intended to monitor and evaluate the Environmental Policy, educate the University community on environmental issues, and serve as a forum for discussion and means of coordination of environmental endeavours. Until 2009 it was chaired by Dr. Brad Walters, who oversaw the introduction of Emissions Reduction Policy. The Emission Reduction Policy was developed and supported by a fourth year environmental studies seminar course taught by Dr. Walters. It was largely as a result of the work of this class and the Environmental Issues Committee that the Policy garnered support from senior administration and was adopted by the University. In 2009 University Controller Robert Inglis became chair, and since this time the committee has mainly focused on implementing the Emissions Reduction Policy and establishing the Carbon Footprint. Over the past two years the committee has increasingly fallen from the public radar and many individuals are unaware that the committee exists. Meetings are sparsely attended by committee members – including staff, faculty and students – due to inconvenient scheduling, and minutes have not been kept. Moreover, the mandate for the committee as laid out in the Environmental Policy is out-dated, calling for the inclusion of individuals whose positions at the University no longer exist (such as the Dean of Students). The committee lacks any deliverables to ensure actions are carried out, and there is a tendency towards different individuals and departments "doing their own thing", rather than coordinating efforts. This committee has moved towards primarily being a body to "report in" to rather than fostering collective action and activity. Furthermore, there have not been any real efforts recently to communicate both internally to the University community, or to engage the greater community.

The Environmental Issues Committee has the potential to be an incredibly effective means of coordination, collaboration, and communication of environmental endeavours at the University. However, like the Environmental Policy it is time for the Committee to

be updated to ensure that it is operating effectively and addressing current issues and interests.

Indicator #5: Communication of Environmental Initiatives

During the summer of 2008, the University hired consultants from Essence Communications to develop a communication plan about the environment at Mount Allison. From this plan emerged a signage campaign involving 'lights out' stickers by all light switches, posters by photocopiers about paper usage, an Eco-Logic logo to indicate environmental initiatives and wet/dry magnets for residence rooms. Though it is no longer actively used, remnants of this campaign can still be found in the continued presence of stickers and the occasional poster around campus.

However, communication of environmental activities remains arguably the greatest struggle for all departments at Mount Allison. The Marketing and Communication department tends towards publicizing only those stories which will be picked up by the media and "heighten the University's profile." Thus stories which are not deemed exceptional and newsworthy for the general public are typically not communicated internally or externally. Although many departments throughout the institution have implemented innovative and positive environmental initiatives, these often go largely unnoticed, or unrealized by the remainder of the University community. It is challenging to learn about what is happening unless you are specifically interested and seek out the information. Although most people use the internet as their primary resource, most information cannot be found on the website, or else what can be accessed is largely out-dated. In a survey sent out to students during the summer or 2011, 64% indicated that there is room for improvement in environmental communication.

Many areas of the University have developed a tendency towards spearheading and completing projects primarily within the parameters of their department. Indeed, it has been alluded to by many interviewees that there currently seems to be a disconnect between faculty and administrative staff, resulting in head-butting rather than collaboration. Instead of working together to demonstrate the holistic and engaging approach to the environment that many at Mount Allison support, there has developed a tendency for many projects to be shared and developed solely within departments rather than engaging individuals in all levels of the institution. This had led to miscommunication, and therefore misinformation, as well as a lack of representation of other parts of the University, and the greater community. Moreover, this imbalance negatively impacts Mount Allison's efforts to embrace a comprehensive and unified vision of sustainability, and therefore diminishes the perception of environmentalism at the University.

In a student survey conducted via email over the summer of 2011, students were asked a variety of questions to indicate their awareness and opinion of environmentalism at Mount Allison. Although only 156 students responded, some of the findings included:

- Approximately 51% of students are aware an Environmental Audit is conducted every 2-3 years,
- 56% are aware that the University has Environmental and Emission Reduction policies, although 90% of surveyed students have never read the audits or policies,
- Approximately 51% of the students indicated that that there could be more environmental content integrated into their coursework, and
- About 67% of students indicated that the University is somewhat committed to environmentalism, and opportunities are available for interested students.

Students

Indicator #6: Concern, Activism and Initiatives

Student-led environmental activism has continued at Mount Allison University. Although in the past there had been several varied environmentally-focused groups on campus such as DELTA, since fall 2008, Eco-Action has been the only active extracurricular, student-led environmental group. Eco-Action has spearheaded a number of initiatives, working in collaboration with other student groups and often with University administration. In the 2008-2009 academic year, students in this group led a campus-wide Tar Sands awareness campaign, organized the annual Campus Climate Challenge and played an integral role in pushing through the SAC referendum to create the Green Investment Fund. In the following year, 2009-2010, Eco-Action paired with the Town of Sackville and EOS Eco-Energy Inc. to organize a '350' day event in coordination with events taking place all around the world. During the homecoming football game, campus and community members rushed onto the football field at halftime to spell out "350" as a call for political action about global warming. The group further hosted an Ethical Giving Day leading up to holiday season, Fossil Fools Day on April 1 and once again the annual Campus Climate Challenge. During the 2010-2011 school year, Eco-Action once again held an Ethical Giving Day, and focused on bringing C3 to other universities throughout Atlantic Canada in a Maritime Wide Campus Climate Challenge.

Since 2008, the University has supported and participated in the annual campus-wide Lights Out Mount A, based on the national Lights Out Canada campaign. Both the nation-wide and the campus event involve turning off lights in classrooms, libraries and dining halls to raise awareness, encourage changing habits and remind individuals that seemingly small actions can have positive collective impacts on climate change.

One of the most significant student-led developments in recent years at Mount Allison has been the establishment of the SAC Green Investment Fund. In a 2009 referendum, 77.8% of the student body voted in favour of an initiative to support the reduction of carbon emissions in the Sackville area. Each student contributes $10.00 annually – incorporated into their SAC fees – to the Green Investment Fund. This fund is then used to financially support those green capital projects focused on carbon emission reduction, submitted by students, staff, faculty and the general public which are successfully approved by the SAC Environmental Affairs Committee.

The SAC Green Investment Fund

The GIF was awarded for the first time in spring of 2010 to one recipient, Environmental Studies student Emily Mann. She spent the summer working on LEAP: the Landlord Energy Assessment Program, which is described as "a free service program meant to help landlords identify economically attractive energy conservation opportunities and to connect them to support for implementing energy conservation measures." The intention of the program was to encourage landlords in Sackville to renovate their homes and rental properties to make them more environmentally friendly, thereby reducing resource consumption as well as utility costs.

In its second year, the application for the GIF was refined and made less arduous and complex. Many issues were smoothed out, such as those surrounding legality and communication. In spring of 2011, three projects were awarded funding: $20,000 to Tantramar Regional High School for the construction of a sustainable and efficient home to serve as a model for efficient construction, $4,000 to the Sackville Community Garden to expand their number of plots, and $8,500 to EOS to fund a solar water heating campaign for bulk purchases to Sackville residents.

General

Indicator #7: Programs and Incentives Exist to Foster Environmental Leadership and Awareness

Although more and more universities are developing sustainability offices, or hiring sustainability coordinators to implement, encourage or coordinate environmental practices on campus, there was no administrative support reported for the creation of such a position or office at Mount Allison. This is largely due to financial restrictions and the belief that environmental sustainability should be considered by, and integrated into, all areas. It is seen that the environment should be of importance to all parts of the institution, rather than the designated responsibility of a single individual or area of the University.

Currently, the only program to raise awareness on campus is the aforementioned poster campaign regarding electricity, water, and paper use. Beyond this, no real programs or incentives are in place throughout campus to encourage individuals to embrace environmental responsibility.

Indicator #8: Community Responsibility and Engagement

Since the previous audit, there has been increasing cooperation and engagement between the student, faculty and the Sackville community on various initiatives. Student groups have worked together with community groups to host various events. Furthermore, there have been a number of student and course-based projects involving outreach and interaction with the town. During the 2010-2011 academic year, students in a fourth year Environmental Studies seminar engaged with town community: one group worked on the development of an expanded Farmers' Market Plan for the Town of Sackville, while another group spearheaded and initiative to get Sackville designated as a FairTrade town. In the same year, a group of Commerce students built and planted a number of garden plots within the downtown core, and a Geography class, The Community Classroom, donated a tree to be planted on the corner of York Street and Main Street.

However, though engagement with the wider community may be increasing, issues persist regarding respectful treatment of the campus itself. Not only is litter a persistent issue – notably on weekends and Monday mornings – but there has been an increase in destructive occurrences both on campus and throughout the town. Campus staff has indicated that there have been problems surrounding broken glass, vandalism and theft of signs, and most notably, the destruction of trees: several newly planted young trees have been broken in half overnight. This increase in damage to the campus results in more work for staff, and increased expenses for clean-up.

Summary

Since the 2008 Audit, Mount Allison has continued to display its commitment to environmental sustainability at all levels. Members from all areas of the University community have worked to educate, raise awareness, and implement change. However, as time passes and the Year of the Environment fades into the past, it is vital to ensure that the Environment does not diminish as a priority. While environmentally-minded action may now be less of a trend, and more of an expectation or assumption, it is still important that it remains a focus and does not fall by the wayside for other interests. Mount Allison strives to reflect a balanced range of interests and values, and though the environment should understandably not be the sole focus, it should likewise not be allowed to fall from the position of prominence that it has held at this institution. With the ability to focus the direction of the University and influence the values and culture of the institution, it is essential that support for environmentalism comes from the President and senior administration, and extends throughout the organization to include faculty, staff and students.

The Environmental Policy and Environmental Issues Committee need to be re-vamped: updated and modified to reflect the present-day needs and interests of the institution. It is essential that the University establish the targets they committed to creating in the

Emissions Reduction Policy. And environmental initiatives need to be communicated much more effectively – among departments, within the campus, and to the general public – in order to educate and remind individuals that "greening the ivory tower" remains a worthwhile interest for the University.

Recommendations

Short Term

- All departments should make a greater effort to communicate their environmental initiatives between departments, as well as with the entire community. In doing so it essential to keep in mind that there is no one single effective way to communicate, but rather many areas and mediums should be explored.
    - This could be implemented through making use of the Environment Mount A website to provide constant updates, internal press releases, articles in the Argosy, social media outlets, etc.
- Mount Allison should sign the Talloires Declaration to publically signify its commitment to environmental sustainability. This declaration could be used as a framework or reference for updating the University's Environmental Policy
- Efforts should be made to hire or involve students to assist and augment staff and faculty led environmental endeavours
    - These efforts and opportunities should be published and made available to the entire student body
- The Environmental Policy should be officially updated to reflect present day issues and needs
    - Establish binding mechanisms to ensure the policy is being adhered to and that the policy and its indicators are reviewed regularly. This could potentially be accomplished through reporting in the Annual Review of Operations
- The Environmental Issues Committee needs to re-establish a vision and update its mandate and membership
    - Establish consistent meeting times to ensure all members are able to attend
    - Record minutes at each meeting and make these available for public viewing online – possibly via the Environment Mount A website
- Create incentives to minimize litter and damage to campus
- Update the Green Evolving Fund document to accurately reflect the reality of the fund's implementation, selection and approval process and areas of focus. A clear and comprehensive document could serve as an effective way to communicate the intent and administration of the Fund to interested parties.
    - Develop a long term vision to ensure the fund focuses primarily on the consideration of environmental values and lessening our impact and not solely on economic considerations
- Reach out to groups within the Town and the region to forge partnership and work together on environmental initiatives

Long Term

- If communication efforts by departments and the University as a whole do not progress and improve, hire a student or individual to act as Sustainability Coordinator. This position would not involve designating the responsibility of sustainable practices to one individual, but rather would entail coordinating environment initiatives of departments and groups, as well as communicating initiatives with the community. They could further provide resources, knowledge and ideas for future environmental endeavours

  The Green Evolving Budget should be applied to investing in renewable energy technologies on campus such as solar panels on residence or academic buildings, solar hot water heaters, geothermal, or wind power.

Indicators	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Recommendations	Long Term Recommendations
Student environmental concern, initiatives and activism.	No Recommendation	Student environmental activism has been resurging. SAC and other student representation at Environmental Issues Committee Meetings have been inconsistent.	Students remain active on campus. The University participates in the student-led Lights Out Mount A, and Eco-Action events. The student-funded SAC Green Investment Fund just wrapped up its second year.	Efforts should be made to involve students to assist and augment staff and faculty led environmental endeavours, jobs and projects Students should seek collaboration with faculty and staff for environmental initiatives	No Recommendation
Executive Support: The environment is expressed clearly as a strategic priority in University planning, budgeting, fundraising, recruiting, etc.	Mount Allison lacks a clear overarching vision for campus sustainability.	The Environment has been included as a pillar in the President's Strategic Statement, released in 2007.	Same. Environment and the "Greening of Mount Allison" one of key priorities included in the JUMP Campaign.	Follow up on whether or not money raised through the JUMP campaign is being invested in projects deemed part of the "Greening of Mount Allison"	No Recommendation
External Commitment: Senior Administration has shown their support publicly by signing a declaration, such as the Talloires Declaration of Environmental Responsibility.	Mount Allison has shown its support for the New England Governors and Eastern Canadian Premiers Climate Action Plan but has not signed onto the Talloires Declaration. .	Same.	Same.	Mount Allison should sign on to the Tallories declaration. The University should make known its signing of the AAU President's Commitment on Climate Change	No Recommendation

Internal Commitment: A written environmental policy exists to "ensure commitment to ecology survives among competing priorities, limited funds, and perpetual turn-over in campus leadership"	Mount Allison has an Environmental Policy, which was adopted in 1999. However, it is in need of updating.	Amendments to the Environmental Policy have been proposed but not presented to the Board of Regents for approval.	Environmental Policy in need of major revision to update, remove and add indicators. In 2009 the University adopted a Carbon Emissions Reduction Policy.	The Environmental Policy must be updated to reflect present day issues and needs, and to ensure indicators or an accurate measure of progress The University needs to establish the targets dictated in the Carbon Emissions policy.	Ensure there are binding mechanisms in place to encourage regular revision of the Environmental and Emission Reduction Policies, and that audits based on these policies are carried out every two years.
New or continuing initiatives, and resources to encourage participation and support	There are no incentives for people to follow the Environmental Policy. Facilities Management is in the process of looking at candidates for the position of "Energy Coordinator".	No Energy Coordinator has been hired. Funding has been made available for the conference and speakers' series. A portion of Leadership Mount Allison funding is reserved for environmental projects. Borrowing from Capital Assets for green projects is being considered.	The Green Evolving Budget was created in 2010.	Update and clarify the Green Evolving Budget document to clarify its vision, purpose and areas of focus. This document could serve as a tool to educate others about the fund.	The Green Evolving Fund should be applied to renewable energy technologies on campus. The University should investigate the feasibility of hiring a student or individual to act as sustainability co-ordinator to ensure proper communication and collaboration of environmental initiatives.
Institutional and Structural Framework to enforce policy and strengthen future initiatives	Mount Allison's Environmental Issues Committee is inactive.	The EIC was reconstituted in 2005 and has been redefining its mandate. Major projects include the development of a Carbon Policy for Mount Allison.	The EIC is active, but meetings are poorly attended, and there is little awareness of the committee and its role at the University.	The Environmental Issues Committee should review and update its mandate to reflect accurate membership and ensure committee is working effectively.	Develop a reporting system for the EIC, including annual progress reports to theCampus community.

Community responsibility and engagement	Some classes incorporate local content; however, there is no formal commitment to regional studies.	Same. Vandalism continues to be a problem on campus.	Vandalism continues to be an increasing problem on campus. More students and classes are engaging with the Sackville and greater community.	Create incentives to minimize litter and damage to campus Continual efforts should be made to foster collaboration and engagement with community groups on projects.	No Recommendation.
Communication of Environmental Initiatives	The University does document large programs.	Same. Mount Allison has hired Essence Communications to develop a communications strategy with input from CCMs.	Communication of Environmental Issues is poor, both internally and externally.	All departments must work to improve the communication of their environmental projects both between their departments and to the greater University and surrounding community.	If communication does not improve, evaluate the potential benefits of a Sustainability Coordinator to communicate and coordinate initiatives on campus and externally.
Programs and incentives exist to foster Environmental Leadership and Awareness	No training programs exist.	Same. Students and Administrative Services have started working together on a campus-wide educational campaign to promote stewardship.	No official, campus wide programs exist. In Fall 2008 a poster campaign was launched. Some aspects of this can still be seen around campus.	The Environmental Issues Committee could play a lead role in brainstorming and encouraging incentives and a program to educate individuals about their impacts and small changes they can make in their daily lives.	No Recommendation.

Curriculum

The University encourages faculty and senate to consider, where appropriate, taking steps to incorporate environmental content throughout existing curriculum, increasing environment related course offerings and programs seeking more resources to dedicate to environmental research. (MTA Policy 2101)

Introduction

Mount Allison recognizes the value of a holistic education, priding itself on its commitment to the development of the "whole person". Mount Allison is primarily an undergraduate liberal arts and science university which offers over 40 different degree options. While there are mechanisms in place including distribution credits, minors, and certificates, to encourage all students to try courses in all areas of study, it is still possible for a student to leave Mount Allison without an exposure to environmental issues. This section of the Audit evaluates how environmental awareness is incorporated or absent in the academic programs offered by Mount Allison.

Indicator 1: Progress of the environmental curriculum

In February 2007 the Mount Allison University Strategic Statement for 2007-2016 was released. The broad objective of this statement "is to make Mount Allison University the best primarily undergraduate university in Canada and among the best in North America". As you can see in Figure 2.1, the environment is one of the pillars for academic program development. Later, in June 2009 the Academic Renewal Plan for 2009-2016 was created to supplement the academic portion of the Strategic Statement. The Academic Renewal Plan outlines the ambitions of the University to maintain and exceed its academic excellence. The Academic Renewal Plan states the University's intended actions to achieve the projects and programs within it.

Due to its nature, the Department of Geography and Environment emphasizes environmental content in its curriculum. Two new degree programs are being proposed by the Department of Geography and Environment. Creating these programs requires rigorous review within the University, by the University Senate, the Academic Matters Committee and by the Maritime Provinces Higher Education Commission (MPHEC). The programs being proposed are a Master of Environmental Science and a Bachelor of Arts in Sustainable Planning. According to the Academic Renewal Plan, the proposal for the Master's degree is to be submitted before the start of the 2011-2012 academic year with the goal of admitting students in September 2011. However, the program has yet to be submitted to MPHEC; therefore, approval for this program will not occur in time to admit students in September 2011. The Department of Geography and Environment, along with some students and a number of professional planners from New Brunswick, evaluated the feasibility of

Figure 2.1 - Excerpted from Strategic Statement

Consider the following broad areas as the basis for strategic emphasis and orientation, for academic program development, for research and professional clustering, and for links with extracurricular activities:

1) Culture and Creativity: Deepen connections amongst drama, fine arts, music, and the other academic programs that deal with creativity and culture, to strengthen and 'lever' Fine and Performing Arts and create a fertile context for consideration of a School of Fine and Performing Arts.
2) The Environment: Use the environment as a prism through which to explore science, society, and humanity – locally, nationally, and internationally.
3) Globalization and its Consequences. Explorations in globalization – from politics, commerce, and environment, through culture, religion, and ideas. Explore possibilities in 'area studies'.
4) Public and Community Service and Citizenship: Link academic study and programming to our personal identities and roles as citizens in the community and in the world, and to prepare students to make a contribution to their society.
5) Science: From Imagination through Experience to Discovery. Deepen our strengths in science by offering active research practice and opportunities in the creation of knowledge and by exploring the roles of science in understanding the natural world and society. (Strategic Statement, p.6)

offering an undergraduate degree aimed at integrated community sustainability. They deemed it to be program that would fill a need for planners within the maritime region. The steps are in place to make these programs a reality, but it will take time and continued support from all levels of the University to make these programs a reality.

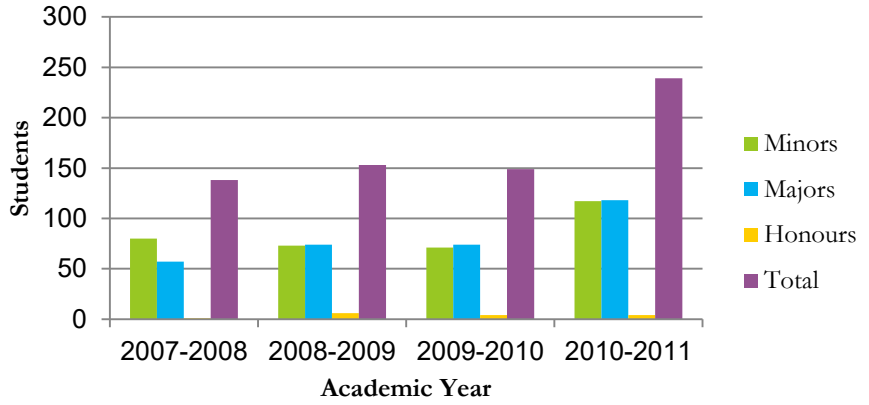
The Academic Renewal plan also mentions the creation of two new technical degree options: biology technician and GIS technician. These programs would mean partnering with New Brunswick Community College (NBCC) and would be an addition to Mount Allison's interdisciplinary programs. Currently, NBCC students can transfer up to 30 credits directly to Mount Allison. With this mechanism in place, the ease of implementing this program would increase. The possibility of a partnership has been reviewed by both NBCC and Mount Allison University, but the projects are currently on hold.

Though the pre-approved degree programs may be perceived as limiting in terms of crossing disciplines, the University has mechanisms in place to allow students to create their own specialized degree. Examples that allow for flexibility include the ability to do multiple majors or minors, the ability to transfer up to 60 credits from other post-secondary institutions, the mandatory distribution credits, a student's ability to design their own program, and international exchanges. All of these are ways for students to gain further insight into environmental issues across all disciplines.

Indicator 2: Students taking courses with substantial environmental content.

In the 2010-2011 academic year, an external review was done of the department of Geography and Environment and two other departments. The Department of Geography and Environment has reported an increase in enrolment in their department since 2008 (see Figure 2.2). Student enrolment in Geography and Environment courses has increased by 74%. It is important to note that not all of the courses in this department contain substantial environmental content.

Figure 2.2 - Geography and Environmental Degree Enrolment



All departments that replied to the environmental audit department head survey reported that their courses with environmental content do not fill to capacity (see Appendix 2.1 for a list of courses with environmental content). Also, of the departments that responded to this survey, they reported no plans to introduce new courses with environmental content between this audit and the next audit due in 2013.

It is also difficult to determine the environmental content for each course offered at the University. While curriculums may not have changed across disciplines, models, case studies and discussions within the curriculum may be environmentally focused.

Indicator 3: Local community resources, such as the Canadian Wildlife Service are utilized and local regional issues are integrated into coursework.

Many academic departments integrate local and regional community resources into coursework. This includes, locally, regionally, nationally and internationally. Many faculty are in some way involved with, the Nature Conservancy of Canada, Ducks

Unlimited, Bird Studies Canada and several others (See Appendix 2.2 for complete list).

In conjunction with the Tantramar 2040 integrated regional sustainability plan, the Geography and Environment Department is in the process of submitting an application to become a United Nations Regional Centre of Expertise on Sustainable Education. The function of such a centre is to create a network for research and training. This centre would facilitate collaboration of research, development and governance among its members. This centre will establish a community level transformative education program across the Tantramar region. Mount Allison University is spearheading this project and recently submitted the second portion of the application. If the application is accepted, it will be the fifth Regional Centre of Expertise on Sustainable Education in Canada and the first in Atlantic North America.

Indicator 4: Cases and examples derived from the audit or other on campus environmental work are incorporated into coursework.

Incorporation of the environmental audits, Environmental Policy or other campus environmental work within coursework was not reported. However, there are reports of classes implementing their own projects on campus and in the community. For example, a course led by Dr. Walters conducted the preliminary work required for drafting the current emissions policy. Other examples include a Commerce class at the community garden and an Environmental Studies class creating a plan for the Farmer's Market (see Indicator 5 of Stewardship for more details on class involvement in the community).

Indicator 5: An environmental certificate acknowledging that a student is graduating with an understanding of environmental issues, resulting from taking a certain number of related courses, is awarded upon graduation.

To date there is no certificate acknowledging that a student is graduating with an understanding of environmental issues. This indicator should be revised due to the widespread opinion that such a certificate does not have a place at Mount Allison University due to the fact that this kind of recognition can be given with a major or a minor. This type of certification could also be the responsibility of the students through existing programs such as the Green Pledge Alliance (see Figure 2.3).

Figure 2.3 - Green Pledge Alliance

Over 15, 000 university graduates across the world are pledging to improve society and the environment through the workplace. The Green Pledge Alliance works to help realize a world where every graduate is an effective leader for social and environmental improvement in their workplace.

Indicator 6: Speakers, presentations, debates and other such methods are utilized to educate campus community members on environmental topics.

Over the past three years there have been a number of environmental speakers and presentations open to all members of the University community and occasionally the general public. See the Stewardship Section for more details on speakers, presentation and debates.

The library has added over $10,000 worth of new books and films to the geography and environment collection. The section of the library containing geography and environment materials is relatively small at 73 shelves It was weeded in 2008/09 to ensure its currency and that there is adequate room for new materials. It is reported that given the huge output of research and publishing cover in this area, current library resources are modest.

Indicator 7: Faculty environmental research.

As mentioned in the 2008 audit, a number of Mount Allison faculty members are involved in innovative research in the environmental field. Many of these professors are supported by Natural Sciences and Engineering Research Council of Canada (NSERC) or Social Sciences and Humanities Research Council of

Canada research grants and involve students in their work. Faculty research can be viewed on individual academic department websites.

Individual faculty at Mount Allison have a significant impact on course content. Due to the small nature of a number of departments, staff turnover can have a more significant impact on course content and availability than at larger universities.

Summary

With increased enrolment in the Department of Geography and Environment and the diminished enrolment in environmental courses in other departments, one has to wonder if students are relying on the Department of Geography and Environment for all of their environmental issues education. While environmental issues are one of the department's main focus, it should not be forgotten that there is crossover of the environment into many other disciplines. Just like there is crossover of other disciplines into Geography and Environment. Overall, departments continue to spearhead involvement with community groups and beyond as well as conduct environmental research. A number of interviewees did not see the merit in having an environmental certificate; therefore this performance indicator should be reviewed. In an institution that prides itself in providing its students with a holistic education, attempts are made to give students opportunities to experience all disciplines. There is some question to whether or not this is achieved. Ultimately, the University has guidelines in place for students to follow and the rest is up to the students.

Short Term

- Re-evaluate the relevance of having an environmental certificate.
- Support efforts to create new technical degree options: biology technician and GIS technician as mentioned in the Academic Renewal Plan
- Do a comparative analysis of Mount Allison versus similar institutions. Involve students in this process for credit or course work.
- Flag courses in the Academic Calendar that contains substantial environmental content.
- Implement the Green Pledge Alliance Program
- Have the Academic Advisors suggest the opportunity to complete interdisciplinary degrees.

Long Term

- Integrate the Environmental Audit and other campus sustainability projects into the academic curriculum through an interdisciplinary project-based campus sustainability course.
- Continue to build partnerships with local environmental organizations through collaborative research, shared resources, and student internships. Also seek donor support for student internship positions and other partnerships.
- Explore opportunities for “hybrid” (combined academic and technical) degrees, for example by combining Environmental Science at Mount Allison with GIS training at a community college. Seek input from outside of the University in programme planning.
- Secure long-term funding for at least one major environmental speaker per year.

Indicator	State of Affairs '05	State of Affairs '08	State of Affaires '11	Short Term Recommendation	Long Term Recommendation
Progress of environmental curriculum	Faculty and curricular additions since 2002 have improved the progress of Mount Allison's environmental curriculum.	The merger of the Geography & Environment and the addition of new course offerings have improved the progress of Mount Allison's environmental curriculum.	The Department of Geography and Environment have high enrolment. Other departments include some environmental content in course work.	No Recommendation.	Finalize plans for the innovative programs, such as the Masters and technical degrees.
Students taking courses with substantial environmental content	Unavailable.	Around 50%. Enrolment rates in the Introductory Geography & Environment courses have been high.	Enrolment rates in Geography & Environment courses have been high. Courses with environmental content in other departments not filled to capacity.	Inform students of the interdisciplinary opportunities that are available to them through Academic Advising.	No Recommendation.
Local community resources, such as the Canadian Wildlife Service are utilized and local regional issues are integrated into coursework	Unavailable.	Utilization of local resources in coursework and research is on an individual basis.	Same.	No Recommendation.	Seek donor support for student internship positions and other partnerships.

Cases and examples derived from the audit or other on campus environmental work are incorporated into coursework	No Recommendation.	The audit has been an underutilized classroom tool. Some campus examples are incorporated into coursework and independent study.	Same. Some classes spearhead their own projects in the community.	Present the 2011 Environmental Audit to community members, students, faculty, and staff.	Have students conduct the environmental audit as part of a problem-based course.
Speakers, presentations, debates and other such methods are utilized to educate campus community members on environmental topics	No Recommendation.	Since 2005, there have been a number of environmentally themed conferences and speakers on campus. In 2008, Mount Allison will be hosting the *Carbon 0-Mission Summit* and the *President's Series on Climate Change and Global Citizenship.*	No longer an environmentally themed speaker series.	Continue to promote the speakers' series and conference to faculty, staff, students, and community members.	Secure long-term funding for at least one major environmental speaker per year.
Faculty environmental research	Unavailable.	A large number of faculty members conduct research in the environmental field and involve students in their work.	Same.	Continue to promote the speakers' series and conference to faculty, staff, students, and community members.	No Recommendation.

Paper

"People who will not sustain trees will soon live in a world that will not sustain people". – Bryce Nelson

Introduction

The nature of an academic institution – its textbooks, note-taking, journals and essays – makes it almost impossible to escape the necessity of paper usage and therefore paper waste. While it may be unrealistic to expect Mount Allison to eliminate paper use in its entirety, the University can certainly reduce its consumption and change the ways in which this product is used.

In order to become a more sustainable institution, it is important to not only cut back on our consumption but also to change our habits and our thinking. While it is essential to *reduce* paper consumption, it is also important to support the *reuse* and *recycling* of this product. It is vital to consider the implications of decisions when purchasing a product, rather than only doing so later, upon disposal. The purchase of paper with a post-consumer recycled content reflects a pro-active and thoughtful approach to paper use through "closing the loop" of the recycling process.

By shifting away from virgin paper towards the purchase and use of both post-consumer recycled paper and paper derived from responsibly managed forests, we can work to mitigate the negative environmental impacts of the paper industry.

UPEI's Environmentally Friendly Paper Policy

As of April 1, 2008 UPEI became the first university in Atlantic Canada to implement a policy requiring all black and white printing on campus to be printed on 100% post-consumer recycled paper.

They further outlined targets for reduction in campus-wide paper consumption: a 20% reduction within 3 years, and a 30% reduction within 5 years.

Indicator#1: There is an effective program to reduce paper consumption

There is currently no formalized paper reduction program at Mount Allison. Most paper use, and any reduction, is the result of individual and departmental initiatives. However, there are several positive steps being taken throughout campus:

- At the time of this audit, there are 42 printers and copiers situated throughout the campus, and an additional 3 in the Print Shop. All printers and copiers are set by default to print duplex.
- The University is making efforts to reduce the number of units on campus, and has been placing multi-use machines which print, scan and photocopy in centralized areas in order to reduce the use and need for individual, peripheral units.
- Campus departments employ a variety of methods to reduce paper usage, such as having a recycled paper drawer in their printers to print one-sided documents or placing single sided paper bins next to their printers.
- The University Bookstore will make notepads out of single-sided recycled paper for a nominal fee to cover the cost of the glue.
- Staff and faculty now have the option of scanning items to be sent directly to their email. This option is being looked into for use in the library in order to reduce the amount of paper being used for photocopying; however, this is limited due to copyright restrictions.
- In 2009, the University made a decision to switch its Learning Management System from WebCT to Moodle. Since that time, many professors have begun to use Moodle extensively, posting chapters and links to online articles, and thereby reducing the need for printed course packs.
- Many professors now permit, or even require, students to submit assignments via email or through Moodle.
- The Academic Calendar is no longer widely available in print format. A minimal number of hard copies are produced for

specific purposes, such as an archived copy kept at the Registrar's Office.

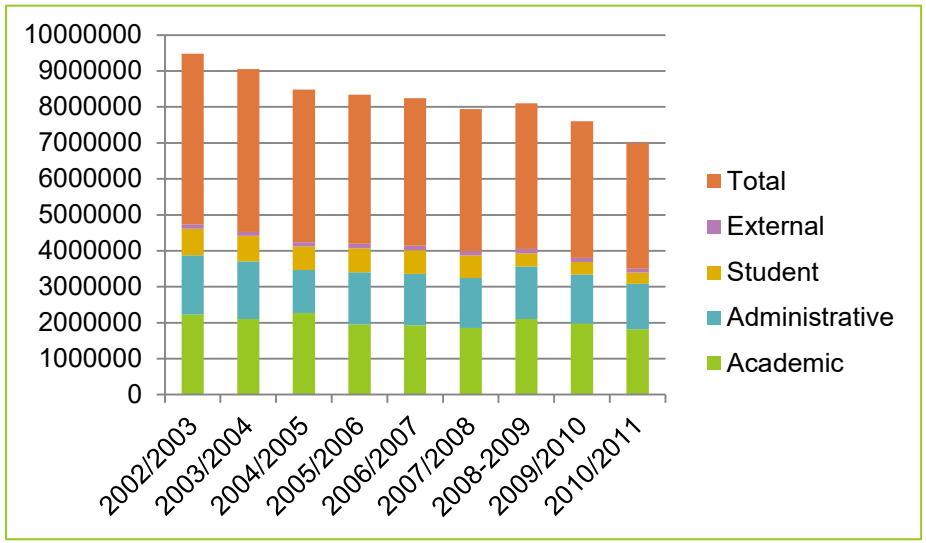
- Financial services has been increasing the number of Purchasing Cards (P-Cards), as well as increasing the permitted value of transaction. This has led to decrease in Purchasing Orders from 2892 in 2001/2001 to 1679 in 2010/2011, accompanied by an increase in P-Card purchases from 67 to 5,586.
- Facilities Management is working to eliminate the use of printed minutes at meetings, electing to use digital projections. They also increasingly receive and store all reports electronically.
- The Argosy website has been re-vamped and updated, providing individuals the option of reading articles online rather than requiring a hard-copy

Overall, paper consumption at Mount Allison has experienced a relatively steady decline over the past 9 years (See figure 9.1). Total consumption has gone from 4,739,500 sheets in 2002/2003 to 3,500,000 in 2010/2011.

Indicator#2: The University purchases 100% post-consumer content recycled paper

The University currently does not purchase 100% post-consumer recycled paper. However, they have recently switched paper suppliers, and are now purchasing paper for the University which is Sustainable Forestry Initiative (SFI) certified. This certification indicates that products used come from timber harvested with sustainable forest management practices, including "measures to protect water quality, biodiversity, wildlife habitat, species at risk and Forests with Exceptional Conservation Value."

All course packs are printed on 100% recycled paper, and this same recycled paper is available upon request at the print shop, for no extra cost. All speciality and colour paper used in the print shop either contains 30% recycled content, or has Forest Stewardship



9.1 Paper Consumption at Mount Allison (sheets of paper)

Council FSC or SFI certification. Furthermore, the bookstore is slowly expanding their selection of paper to include more recycled paper, FSC and SFI certified paper.

Summary

Mount Allison has done a commendable job in reducing paper usage and changing consumption habits as a result of individual initiative. However, the University would benefit from the implementation of a campus-wide Paper Policy, or through providing programs and incentives to further educate individuals about the impacts of paper use. Ensuring all campus and community members are properly educated about the impacts of their actions, and changing the types of paper used, are seemingly simple actions that can have an immensely positive impact both within our own campus and our global environment.

Recommendations

Short Term

- Support Services, in conjunction with ISI, should begin to purchase paper with post-consumer recycled content (in

addition to responsible forest management certification) for University-wide use, thereby "closing the loop" of the recycling process while also emphasizing the importance of the entire lifecycle of a product, not merely content.

- Given the increasing integration of computers into academic life, electronic final exams should be considered
    - Pilot the use of computers for final exams in courses with smaller class sizes to test the feasibility and benefits.
- Promote Bookstore services:
    - Request to print on recycled paper
    - Convert used paper into notepads
- Re-evaluate the number of hard copies of the *Argosy* that are being printed and take orders for *7 Mondays* and the *Allisonian* to prevent overprinting.

Long Term

- Mount Allison should develop a University-wide paper policy or education program to educate campus members about the importance of paper-use reduction and the steps they can take to minimize their impact (this includes tiling print jobs when possible, scanning documents, digitizing documents and records when possible, etc.)
- Implement the 'Scan to USB' or 'Scan to email' function on library copiers to reduce student paper consumption.
- Stop printing hard copies of *the Argosy*, rather use only a fully online version.
- Provide digital copies (such as CD or USB), by order, of *7 Monday*s and the *Allisonian.*

Indicator	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Recommendation	Long Term Recommendation
There is an effective program to reduce paper consumption.	There is no paper waste reduction program.	All printers under the purview of Support Services are set to default to double-sided printing. Departmental efforts have been made to reduce consumption; however, there is no campus-wide program.	Hard copy of the Academic Calendar has been almost entirely phased out. All printers and copiers set to duplex. There remains no campus-wide program.	Re-evaluate the necessity of printing, or at least the number of hard copies printed, of widely-distributed items such as the Argosy, 7 Mondays and the Allisonian.	Mount Allison should develop a University-wide paper policy or education program to educate campus members about the importance of paper reduction and steps that can be taken to minimize their impact. Implement the Scan-to-USB function on library and other student-used printers.

The University purchases 100% postconsumer content recycled paper.	Due to a supplier switch, the University is waiting for input before making the decision on whether or not to buy recycled paper. Testing was done in 2004 with 30% postconsumer content paper.	Further testing of recycled paper found the postconsumer content paper to be unsatisfactory.	University has begun purchasing paper which is SFI certified. Recycled paper is used in course packs, and available upon request in the Print Shop.	The University should purchase paper sourced from responsibly managed forests and containing some post-consumer recycled content.	No Recommendation.

Food

The University will endeavour, through the Department of Administrative Services, to minimize the ecological impact of food consumption on campus. (MTA Policy 2101)

Introduction

We live in a society where the choice of what goes on our plate and in our bellies is vast. There is growing concern over the environmental consequences of our food. To mitigate the impact our food has on the environment, individuals can eat locally, consume less meat, grow their own produce, and support organic and best practices farming. With an half of the student body living on-campus, it is increasingly important that Dining Services keep up with the demand for more environmentally and socially responsible food choices. This chapter asks "How sustainable is Mount Allison's food system?" As in the last audit, categories for this section were borrowed from the Penn State Indicators Report:

1. Dining Hall Diet
2. Dining Hall Waste
3. Dining Hall Policies

This chapter will evaluate the steps taken by Mount Allison's Dining Services to make environmentally sustainable food choices.

Dining Hall Diet

Indicator 1: Menu planning accommodates several different diet types and incorporates student concerns

In the Jennings Dining Hall, vegetarians are accommodated by a separate vegetarian station which is operational during lunch and dinner hours. The salad bar is open every day and the made-to-order station always offers a vegetarian entrée. A range of vegetarian protein options are available including veggie burgers and mock meats. Dining Services continues to add to its vegetarian menu using recipes taken from PETA's website. Individuals who eat meat can choose to eat locally sourced products such as seafood and poultry. Dining Services also continues to consult with students to help accommodate individual dietary concerns and restrictions. Additionally, Mount Allison University has ranked in the top five of the peta2 vegetarian and vegan-friendly awards three years running. This highlights the commitment of Dining Services to serving foods low on the food chain.

The Food Committee, is comprised of dining services management, a SAC representative and a representative from each house. Their purpose is to meet to bring up concerns, questions and requests. The "beef board", located at the entrance to the dining hall, is a place for students to leave comments. In addition, comments can be left with the manager that is present in the dining hall, via e-mail or through a food committee representative.

Indicator 2: Information regarding ingredients and processing are available to students at point of purchase

Nutritional information is made available to students. Special signage is occasionally posted above foods that are sourced locally. This is not always done and Dining Services hopes to showcase local foods more consistently. A local meal is now served twice per term and is advertised as such. The new seafood supplier from Cape Breton, Green Island, will be making an appearance in the dining hall to discuss their practices and answer questions. More information can be obtained from staff.

Dining Hall Waste

Indicator 3: Measures are in place to prevent excess leftovers

Several key measures are unchanged since the last audit but still should be noted for their environmental conscientiousness. There continues to be the plate scraping system which was implemented in 2007. By having students scrape their own waste into the garbage they are more aware of what they do and do not consume. The dining hall has been tray-less since the summer of 2008, which reduces food

waste and resources used to wash trays. Dining Services continues to do some on-demand cooking so as to minimize food waste. Servings and portions consumed per meal are also tracked to be used for future meal planning.

As part of a Dining Services business strategy implemented in September 2010, portion sizes have been reduced to allow students to sample a wider variety of choices as well as reduce waste. In many cases a smaller size of individual dishware was purchased, such as vessels for baked pasta.

Indicator 4: Packaging and waste are minimized

Most food is purchased in bulk, which helps to minimize packaging as well as reduce cost. Teas continue to be individually packaged, although alternatives such as liquid tea options are being explored by Dining Services. For catering services, efforts are ongoing to reduce individually packaged items. For example, there has been a shift toward using butter balls instead of individual plastic butter containers. Condiments in Gracie's continue to be individually packaged as consumption is less predictable. Disposable salt and pepper shakers are still being used, each one lasting approximately one month, due to concern about glass shakers being taken from the dining hall. Prompted by one student's suggestion in early 2010, Dining Services no longer uses muffin papers during the academic year.

Indicator 5: Compost and recycling programs are used

The central change since the previous Audit is that food waste is now going into the Wet stream at WASWC instead of being sent to landfill as was the situation at the time of the 2008 Audit. Food waste, mostly from the scraping station, is pulped to remove much of the water content (decreasing its volume and weight and therefore the number of loads driven to Moncton and its disposal cost). It is stored in small bins that are lined with green bags and stored in a refrigeration room until it is taken away. Bags are picked up several times per week during the academic year and on an on-call basis during the summer by a landscaping company to take it to WASWC.

Mechanisms for dealing with dining hall food waste on-site are currently under investigation. A request for information was issued and several options were looked at more thoroughly. Obstacles include cost as well as specifications about what can and cannot go through these machines (i.e. napkins). However, it is expected that systems will be piloted in the coming years.

For a brief time between 2008 and 2010 vegetable oil was being sold for biodiesel conversion to a company called Rothsay. However, this agreement terminated and vegetable oil is no longer being re-used. Cardboard boxes are often used by students, ice cream buckets are sometimes taken by staff for gardening, and occasionally specific materials are collected for projects (for example, one student recently collected milk cartons).

Indicator 6: China or reusable plastics are used

China is used in the dining hall at all times, except when the dishwasher breaks down. Gracie's and the Flying Bean use biodegradable dishware that contains cornstarch. One interviewee had personally tested and confirmed that a plate broke down in 45 days once buried in their yard. This is also used in bag lunches and at outdoor events. Gracie's continues to default to disposable dishware; however, Dining Services stated that since January 2011 meals can be served on china if the client requests it.

An extra fee applies to beverage purchases that use a disposable mug. A coffee card program was started in September 2010 with the 10th coffee being free; using a reusable mug every time accelerates the process by making it apply to the 7th beverage. Re-usable mugs were not included in frosh packs in recent years as they had been in the past.

Dining Hall Policies

Indicator 7: Organic and fair trade options are used

Currently Dining Services purchases very few organic options largely due to the cost differential between organic and non-organic options.

All coffee served in Gracie's and the Flying Bean is the Just Us! brand from Wolfville, Nova Scotia and is certified organic and 100% Fair Trade. Coffee served in the dining hall is Mother Parker's brand and, according to Dining Services, is also 100% Fair Trade. Mother Parker's coffee is purchased because it is less expensive than the Just Us! coffee. The University continues to sell Lipton's tea, but is planning to look into the availability and feasibility or serving Just Us! Fair Trade tea. At catered events, Fair Trade hot chocolate is served.

Indicator 8: Food is procured from local sources, and is served in season

As in the previous audit, dining services at Mount Allison are provided by Aramark Canada. As a part of their contract, signed in 2006, they were required to provide 33% local product, though as of 2009, dining services aims to purchase 40% of its food from local sources. "Local" at Mount Allison is officially defined as a "Maritime Diet", including food sourced from within a 5 hour radius of Sackville. This includes companies such as Scotsburn Dairy, Confederation Cove, Cormier Seafood and Eden Valley. In addition, given a comparable price, the University aims to purchase products that must be imported – such as lettuce – from processors within the region. It is likely that the percentage of locally grown and produced products will not increase unless there is a corresponding increase in meal plan costs.

The University aims to serve 40% local food year round; however, there is variation based upon the seasons and the availability of products requested by students.

Dining Services also typically tries to serve in-season products, such as more root vegetables during the winter months, though a large amount of food remains imported from warmer climates.

Mount Allison Farm Initiative

The University has owned a 24 acre parcel of farm land on York Street for the past 50 years. In the Spring of 2011, it was decided to develop this land into a working farm. The farm initiative has been spearheaded by Administrative Services with interest in such an endeavour expressed by a number of parties throughout the University and greater community in previous years.

Two students have been hired over the summer of 2011 to develop an initial three (out of a planned ten) acres of the farm for food production, which will be divided into two sections: one using organic farming practices and the other using eco-farming techniques involving a mix of organic, chemical fertilizers and best-practice approaches. Using a combination of seeds from Veseys in PEI and transplants from Anderson's Greenhouse in Sackville, the farm will grow vegetables to be used by Jennings Dining Hall. The farm also relies on volunteers for help in planting, weeding and harvesting. The initial business plan projects that by the third year of operation the farm will begin to generate a surplus and thus cover all debts incurred during the first year of operation. The farm is also intended to function as an outlet for campus compost and the original plan looks to designate an additional acre for fruit trees, flowers, herbs, and space for a bee hives.

While the farm is still in its infancy, it is too soon to evaluate its success. It is fair to say that thus far it has encountered its share of challenges. Running water was received in the middle of July and, at the time of the audit publication, electricity was still not installed. Furthermore, because the project was only approved in March 2011, the farm had a late, somewhat rushed, start in regards to planning, ploughing and planting. To date, the Farm Advisory Committee intended to integrate interested and knowledgeable parties has not

Conventional plot at the Mount Allison Farm

yet met. The farm coordinator has drawn upon local resources, such as joining ACORN, discussions with Co-op Atlantic and support of the Chignecto Soil and Crop Association. Initially, there has been very limited communication about the farm and its development to the campus and greater community.

There is strong interest and support from both the University and the Sackville community for this initiative. It is essential that Mount Allison continue to draw upon and further integrate the input of local farmers, resources such as the Community Garden, ACORN Coop Atlantic, and the interest of staff, faculty and students. As the farm will never be able to produce enough food to sustain, or even significantly contribute to, the Dining Hall, its greatest value undoubtedly lays in its potential as an educational resource and a tool for active engagement. With comprehensive planning in the fall for spring 2012, the farm has the potential to be an invaluable resource for community collaboration, experiential learning and a greater understanding of, and connection to, the food we eat.

Indicator 9: Products which meet or exceed the standards outlined by the National Ecology labelling system are purchased

The auditors could not find any information about the National Ecology Labelling System or its use at Mount Allison. We recommend this indicator be removed, or updated to reflect present-day standards.

Did you know?

Dining Services staff are making use of an mobile app that lists responsible seafood choices!

Indicator 10: Fish species at risk are not served

Dining Services does not have an explicit policy governing which fish species may be purchased. They use the Canada Seafood Guide (Appendix 4.1) as a guideline, and try to only serve those species from the green and yellow categories. Furthermore, Dining Services has a list of local seafood from which they can choose to purchase. This list indicates what province the seafood is from, whether it is widely available for purchase or must be specially ordered, and whether or not the fish species or product is Marine Stewardship Council certified.

Summary

Except for the reduction in animal protein in the menus, the dining diet has gone unchanged since the 2008 audit. Vegetarian and vegan choices continue to be available at every meal and new recipes continue to be explored. Many of the dining hall waste practices remain the same. Small, but necessary steps have been taken to reduce the amount of waste going to landfill. While Dining Services reports that they serve 40% local food, the definition of local remains unclear. The Mount Allison Farm has been an exciting development on campus, though at the time of the completion of this audit, the farm had not yet yielded any product. Its development will have to be tracked next audit.

Recommendations

Short Term

- Farm specific:
    - Implement the farm advisory committee in order to engage students, community members, local farmers and organizations in planning and development
    - Clarify the Farm's mandate/mission
    - Develop or clarify a clear and comprehensive vision statement
    - Closely monitor the development of both the organic and eco/best-practices farm plots. Use this process as a learning experience through involving classes, research, and interested community members
    - Engage with other institutions that could collaborate and provide resources and expertise for the Farm project, such as the Nova Scotia Agricultural College
    - Develop a course (in Biology, Geography or another discipline) focused on sustainable agriculture, using the Farm as a hands-on learning tool to augment and enhance coursework
- Consistently mark local food with signage.
- Encourage the use of china and silverware at Gracie's as an alternative to paper and plastic products
- Investigate expanding the choice of fair trade beverages, particularly tea and hot chocolate.
- Increase the number local meals served, start with once per month.
- Investigate options for reusable salt and pepper shakers.

Long Term

- Seek alternatives to using small Wet bags for each pulper load.
- Continue exploring options for processing post-consumer waste on-site.
- Explore the possibility of selling used vegetable oil once again.
- Only serve seafood from the Best Choice section of the Canada Seafood Guide.

Indicator	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Recommendation	Long Term Recommendation
Diet					
Menu planning accommodates several different diet types and incorporates student concerns	Vegetarians are accommodated in the meal rotation. Other diets are accommodated on a per student basis.	Vegetarians are accommodated at all stations. Other diets are accommodated with a special needs fridge and on a case-by-case basis.	Same.	Continue to move towards lower on the food chain options, reducing the overall amount of meat served.	No recommendation.

Information regarding ingredients and processing are available to students	A binder is available, although not at the point of purchase. Information is also accessible online.	Students may access some nutritional information using the "Mytrition" electronic kiosk. Ingredients must be solicited from the chefs. Starting in September, signage will highlight local items.	Nutritional information is always posted. Some local meals are marked with signage.	Communicate the serving of "local" food to students. Make ingredients available to students. Make sure to highlight when sustainable options are served.	No recommendation.
Waste					
Measures are in place to prevent excess leftovers	On-demand cooking is used and has been successful in reducing the amount of food being thrown out.	On-demand cooking, a plate scraping station introduced in September 2007, and going tray-less in the spring of 2008 all help to reduce food waste.	Jennings remains tray free and has continued the scraping station. Portion sizes have been reduced.	Keep it up!	No recommendation.
Packaging waste is minimized	Much packaging is avoided by buying food in bulk.	Same.	Typically, condiments used at Gracie's and for conference serves are individually wrapped. Most items for meal hall are purchased in bulk.	Negotiate programs for returning packaging to the vendor.	Explore alternatives to individual green bags for pulped waste.
Composting and recycling programs are used	All waste is sent to WASWC which diverts wet waste to compost heaps and recycles materials through a sophisticated sorting system.	Waste from within the dining hall is diverted through the wet/dry system. Food waste from the kitchen and scraping station is land filled.	Composting options are being explored. Food scraps are pulped and stored until pick up.	No recommendation.	Continue exploring options for processing post-consumer waste on-site. Explore possibility of selling vegetable oil again for re-use.

China or reusable plastics are used	China is used in the dining hall.	China is used in the dining hall. Biodegradable plastic dishware is used in the retail cafes. A 10 cent surcharge will be applied to paper cups in the retail cafés in September 2008.	China is still used in dining hall, for conferences and by special request at Gracie's. Bagged lunches and the Flying Bean use biodegradable dishware.	Encourage the use of china and silverware at Gracie's. Investigate options for re-usable salt/pepper shakers. Educate campus community members about the biodegradable dishware.	No recommendation.
Purchasing Policies					
Food is procured from local sources and is in season	A small portion is procured from local sources.	An average of 40% is procured from local sources.	Same.	Increase the number of local meals served, starting with one per month. Ensure local food is promoted by signage	Continue to integrate local food wherever feasible.
Organic and fair trade options are served	JustUs! fair trade and organic coffee products available campus-wide as of Fall 2005. Looking into Speerville Mill for local organic grains. Commitment to CHSRI and rest of student body to provide meals with local/organic ingredients twice a week.	Few organic options are served. All coffee on campus is either JustUs! or Expresso brand fair trade and organic.	Similar to 2008. Mother Parker coffee in the dining hall is 100% fair-trade. Other Just Us! products are being considered for purchase.	Investigate expanding the choice of fair trade beverages, particularly tea and hot chocolate.	No recommendation.
Fish species at risk are not served	Currently Mt. A serves mainly haddock, tuna, farmed Atlantic salmon and occasionally crab. Farmed Atlantic salmon is a species at risk.	Make a pledge to not serve the red-flagged species in Canada's Seafood Guide and limit the yellow-flagged species.	Sea Choice and the Marine Stewardship Council are considered when purchasing seafood and fish products.	No recommendation.	Only serve seafood from the Best Choice section of the Canada food guide.

Solid Waste

The University will endeavour, under the supervision of the Department of Facilities Management, to minimize solid waste production. (MTA Policy 2102)

Introduction

Taking a closer look at the amount and type of waste we produce as individuals and as communities is often approached hesitantly, as it can quickly become a complicated and messy process. Understanding how the Mount Allison community deals with solid waste is integral to reducing, re-using, and recycling products in order to lessen our footprint as consumers. Furthermore, reviewing current processes is the key to rethinking our behavioural patterns and recognizing what efforts are already being made to increase landfill diversion rates, make lifecycle-conscious choices, and decrease our campus' environmental impact when it comes to solid waste management.

In taking a cradle-to-grave approach when auditing, some types of waste are not addressed in this section but rather in their respective chapters. The auditing team felt this was important as 'waste' does not simply appear out of thin air and materials deemed for disposal result from many people and processes as well as the objects themselves. This chapter will outline the following waste streams: Wet/Dry, redeemable pieces, cardboard, household hazardous waste, construction waste, and furniture. Further information regarding other forms of waste can be found in Food (Chapter 4), Hazardous Materials (Chapter 6), Grounds Keeping (Chapter 7), and Water (Chapter 10).

What happens to your garbage on campus?

Waste produced by Mount Allison is disposed of and sorted a variety of ways. For a visual reference to the following explanation see Appendix 5.1. The average piece of garbage is sorted into the Wet and Dry system implemented by the Westmorland Albert Solid Waste Corporation (WASWC). People on campus in all buildings place their trash into containers lined with blue (Dry) or green (Wet) semi-transparent bags depending on waste type (see Appendix 5.2-sorting chart). These bags are taken by Custodial staff to a designated garbage room or outdoor bin for each building where Grounds staff take them to a central dumpster area by truck. Non post-consumer waste from the Dining Hall (waste not from scraping station) is sorted, put into bins behind the Dining Hall, and taken to the central dumpster area. Outdoor garbage cans are all lined with green bags and Grounds takes these bags to the central Wet dumpsters.

The central dumpster area is emptied and waste is transported by an external contractor, currently MDI Waste Management, to the WASWC facility in Moncton where it is weighed and enters their system. This is a change since 2008: PBS used to take Mount Allison's waste to the PBS transfer station in the Sackville Industrial Park where it was combined with waste collected from other sources before trucking it to WASWC. The current system of direct transportation from campus to WASWC allows for more control and means that Mount Allison has been able to begin tracking its waste by weight.

Redeemable pieces, such as bottles and cans, can go to WASWC in the Dry stream. However, most are independently returned for deposit by residences for house funds or by campus community members on their own time to Wheaton's All-in-One, located in the Sackville Industrial Park.

What happens to your garbage once it leaves?

The WASWC deals with Mount Allison Wet/Dry waste just as it would other households in the county who sort their garbage. Employees hand-sort the Dry waste for recyclable materials that are then sent in bulk to local facilities; if local facilities are not available, products are shipped further away, both nationally and internationally. Efforts are constantly being made to find and utilize new markets for products such as sneakers, milk cartons, glass and Styrofoam (see Table 5.1 to follow and Appendix 5.3 for further information). Mechanized sorting for Wet waste filters out small pieces of waste

material that are churned in large piles to become compost that is used on-site. Remaining Wet waste is added to the landfill that is on the WASWC site.

Material	Destination	What happens to it?
Cereal boxes, Tim Hortons' cups	Saint John, NB or Minas Basin, NB	Pulped and rolled to make cardboard
Saran wrap, plastic packaging	China	Melted and moulded to plant pots; shipped back to N. America
Milk Cartons	Overseas	Wax is stripped off and disposed of; paper left is high quality and sold as expensive writing paper
Sneakers	Memphis, Tennessee	Taken apart, shredded, and used to make track and field surfaces

Table 5.1-Examples of materials sent from WASWC to be recycled

More than paper and pizza boxes

Waste that does not fit into the Wet/Dry system is dealt with in a variety of ways. While not as apparent on campus as sorting stations and metal garbage bins, specific waste streams are dealt with by certain departments on a daily basis. Some unconventional waste goes to the WASWC landfill site (see Indicators). Waste that WASWC classifies as 'Household Hazardous Waste' is not accepted from commercial institutions like Mount Allison. This includes compact fluorescent lights, batteries, and paint. These are disposed of by a Canadian industrial waste management company called Newalta which strives to re-use, recycle, and dispose of materials in an environmentally responsible manner; their facility is located in Sussex, NB. Cardboard is placed in a dumpster at Jennings Dining Hall, the largest producer of cardboard waste on campus, and taken away by MDI to be recycled at WASWC.

Indicator 1: There is an effective waste reduction program

There is no campus-wide coordinated waste reduction program in place. The 2008 Waste Audit included a Green Plan with recommended targets for waste reduction but there has been little activity in terms of communicating these goals or strategies within the campus community. Furthermore, this was three years ago and its effectiveness as a University document has not been evaluated, nor have further waste audits been performed for comparison purposes as suggested by the 2008 Environmental Audit.

Staff expressed concern regarding the use of seemingly simple quantitative targets as a measure of progress due to the nature of fluctuating student numbers, staff turnover, and the risk of encouraging hoarding – an activity which could take up valuable storage space on campus in efforts to reduce waste numbers and meet targets. Facilities Management highlighted that programs like the Dump & Donate program in residence buildings and the Academic Barclay/Flemington building's Garbage Day have been successful in encouraging the removal of excess equipment/furniture and are important strategies in an overall waste reduction program. It is clear that while a waste reduction program is a good idea, indicators for the effectiveness of such a program need to be established with input from all staff involved for it to be feasible and supported at all levels.

Indicator 2: The wet/dry program is utilized effectively. *(Assessed through educational efforts)*

Qualitative information from University staff indicated that while there have been efforts in the past by Facilities Management to promote Wet/Dry sorting education through Student Life, this has lapsed in recent years and should be re-established to increase landfill diversion. It was highlighted that a large portion of Wet/Dry waste comes from residence buildings and that most students who live in residence are new to Sackville and its sorting system. It was suggested that targeting on-campus students is extremely worthwhile. Most garbage bins have been removed from classrooms in order to make use of newly installed sorting receptacles in the hallways, which encourage proper sorting behaviour and are more convenient for custodial staff. It must be noted that the labelling of most of these receptacles is not "Wet/Dry", but some combination of "Plastics/Organics/Paper/Trash." This may be clearer for some but

does not promote understanding the WASWC sorting system. It was further reported that when smaller bins were initially removed students would often leave garbage in classrooms thus creating more work for staff, although one interviewee argued that this was always the case simply due to lack of respect. Either way, it was reported that this transition period appears to be coming to a close and the second year of central sorting is proving successful from the perspective of custodial staff. Wet receptacles are also being removed from offices to promote good sorting behaviour, place more responsibility on users instead of Custodial for emptying bins, and decrease the number of bags used. It was unclear if this has a positive or a negative impact on sorting habits since large sorting stations promote correct sorting but Dry receptacles remaining in offices may be susceptible to contamination by individuals not wanting to walk Wet waste to central areas.

While it is difficult to measure compliance rates for sorting, there are a wide range of opinions about how well members of the campus community are sorting their garbage. Interviewees highlighted lack of education, distance to garbage bins, scepticism about how well the Wet/Dry system works, and simple lack of effort and taking responsibility. The general compliance with sorting redeemable bottles and cans was said to be higher, which could be attributed to financial incentive of deposits for residences or basic recycling knowledge held by students from out of county. One interviewee suggested evaluating the effectiveness of current educational efforts, such as the role of Eco-reps in residences before putting effort into intensifying or starting new campaigns.

The 2008 Waste Audit showed sorting contamination rates for several buildings and highlighted suggestions for Facilities Management staff to encourage proper sorting habits. However, though it was mentioned in the 2008 Environmental Audit, the suggestions were not widely shared to the campus community and the process lacked an awareness and communication component.

Did you know?
Compost from WASWC cannot currently be sold commercially due to the contamination of glass pieces from improper sorting, so make sure to put glass into the Dry stream!

See Figure 5.2 below for a breakdown of waste that was disposed of by Mount Allison from May 2009 to April 2010 and Appendix 5.4 for further detail. The high figure for December waste was attributed to a large-scale clean out of the library. The availability of this data is attributed to the new system direct transportation to WASWC instead of being sent via a central transfer station.

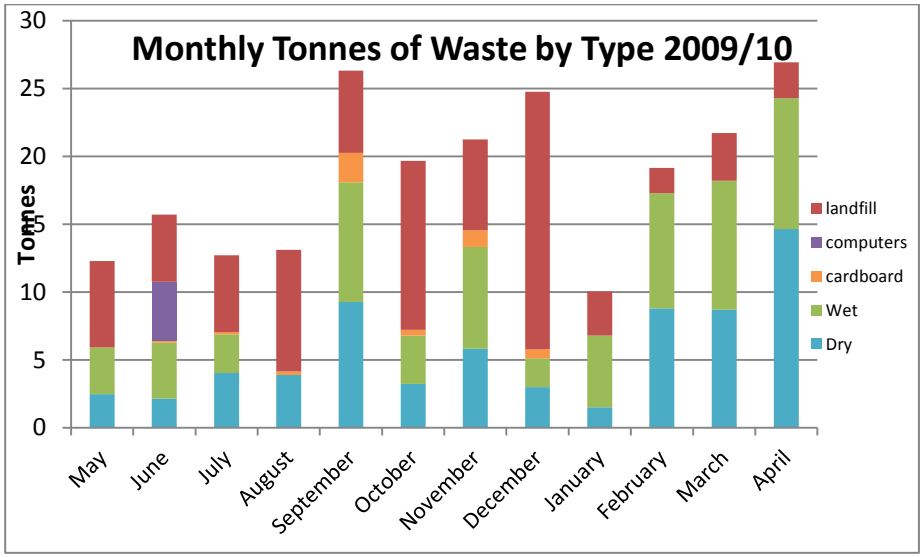


Figure 5.2- Waste taken away from Mount Allison by type (provided by Facilities Management)

Indicator 3: Furniture is offered for sale or donation prior to disposal.

Furniture belonging to the University that is deemed surplus is generally offered up for sale—often multiple times if it is not bought the first time—in an attempt to follow the 're-use' principle. If it is not sold or is broken, it is taken to the WASWC landfill with other unconventional waste, such as that from construction and the Fine Arts Department. Some pieces are picked out by WASWC personnel for Habitat for Humanity if they are in good condition, or if the materials are of value otherwise (i.e. scrap metal).

Indicator 4: Construction waste is recycled and re-used as much as possible.

Construction waste is directed to the WASWC landfill with other unconventional waste, such as that from the Fine Arts Department. Construction waste undergoes similar procedures for salvaging materials as furniture waste in the previous indicator. Facilities Management looks closely at waste in its respective departments (i.e. the heating plant) to determine what is of value for re-use before disposal. Contractors dispose of their own waste. The Fine Arts department also indicated a passion for acquiring unconventional waste for student project use.

Summary

Mount Allison's solid waste streams are by no means simple to understand at the surface. While most staff and faculty are accustomed to the Wet/Dry system, students continue to struggle with this unique way of sorting garbage. Significant efforts need to be made in order to ensure maximum landfill diversion by proper sorting. Procedures for disposal of furniture, construction materials, and other unconventional waste are well-established. The lack of campus-wide communication and coordination for waste reduction was apparent, as the majority of efforts made are on an individual basis. While this shows commitment on the part of the individual, coordination needs to be established to maximize waste reduction and landfill diversion by the entire campus community.

Recommendations

Short Term

- Organized trips to Westmoreland Albert Solid Waste facility in Moncton for campus community members (target students) to promote better understanding of system.
- Incorporate an interactive Wet/Dry activity into Orientation Week with common residence garbage items (i.e. pizza boxes, Kleenex, etc.); re-establish collaboration between Facilities Management and Student Life for programming
- Re-evaluate layout of paired green/blue bins and sorting stations in WMSC and the library as these buildings have a big variety of waste and high student flow (mailboxes, printing, Gracie's/Flying Bean food and dishware, etc.)
- Ensure changes, such as removing bins from classrooms and installation of central sorting stations in hallways, are paired with education campaigns explaining the reasoning for such changes and the benefits of complying
- Have a Dump & Donate bin year-round in residence buildings
- Re-visit 2008 Waste Audit to look at both the content itself (measure any progress made since) as well as benefits of doing such a report; lack of communication of the report to the University community was noted from 2008; however, revamping the process with the input of all Facilities Management departments involved could make future waste auditing raise awareness and be a quantitative indicator of waste on campus
- Seek input of entire campus community for views on waste reduction targets and measures to achieving these goals; instead of highlighting numbers as indicators, emphasize processes and personal responsibility

Long Term

- Evaluate feasibility of having outdoor sorting stations, instead of all cans simply being deemed Wet
- Continue to explore feasibility of a Dry waste compactor for Mount Allison, as this would decrease trips made to WASWC and therefore resulting transportation emissions
- Building on campus community input, create formal waste reduction strategy tailored to fit Mount Allison's operations

Indicator	State of Affairs in 2005	State of Affairs in 2008	State of Affairs in 2011	Short term Recommendation	Long term Recommendation
There is an effective waste reduction program.	There is no waste reduction program on campus.	Same. Short term goals: -10% reduction -coordinate and publicize existing reduction programs Long term goal: -30% reduction.	No change.	-Review processes and results from 2008 Waste Audit; evaluate effectiveness of communicating results and consider further waste audits -involve entire campus community in decision-making for waste reduction strategy.	-Continue to explore feasibility of a Dry waste compactor for Mount Allison -Building on campus community input, create formal waste reduction strategy tailored to fit Mount Allison's operations.
The wet/dry program is utilized effectively. *(Assessed through educational efforts.)*	-The wet/dry program has been implemented University wide -Separate recycling program not needed; some residences cash in redeemable bottles/cans.	-Diversion rate from 60 to 45% (Jennings waste to landfill since 2006) -EcoAction explains system to residences -Sorting units to be piloted Fall 2008 Short term goals: 70% diversion, 85% perfect sorting Long term goal: 100% perfect sorting.	Not able to measure change. -New central sorting units are installed and appear to be used effectively and many bins have been removed from classrooms and offices -2008 External Waste Audit showed contamination rates but no follow-up.	-Organize trips to WASWC facility; contact WASWC about coming to campus -Incorporate Wet/Dry activity into Frosh Week -Check up on locations of Wet/Dry bins in WMSC and library -Ensure changes are accompanied by education.	-Consider feasibility of Wet/Dry outdoor stations.
Furniture is offered for sale or donation prior to disposal.	-Furniture is stored and either re-used around campus or sold.	-Dump and Donate diversion program launched May 2007.	No change.	Have Dump and Donate program year-round in residences; on-going promotion.	No recommendation.
Construction waste is recycled and re-used as much as possible.	-Construction waste offered for re-use to contractors -Otherwise it is recycled by Fero or Westmorland.	-Waste Audit revealed that most construction waste is landfilled. Short-term goal: -Purchase a roll-off bin and recycle construction waste.	No change in procedure -External contractors deal with their own waste -When possible, items are re-used elsewhere on campus or recycled.	Ensure maximum reuse of materials.	No recommendation.

Hazardous Materials

The University will endeavour, under the supervision of the Department of Facilities Management and other departments, to limit and monitor the use of hazardous materials on campus grounds, in cleaning and in laboratories. (MTA Policy 2101)

Introduction

In Canada, there has yet to be a uniform federal definition or classification scheme for hazardous wastes. A common definition is "[w]aste is any substance for which the owner/generator has no further use and which he/she discards. Hazardous wastes are those wastes which, due to their nature and quantity, are potentially hazardous to human health and/or the environment and which require special disposal techniques to eliminate or reduce the hazard". It is by this definition that this chapter will review hazardous materials and hazardous waste on campus. The New Brunswick provincial government, with the guidance of federal regulations, sets regulation for how Mount Allison obtains, stores, uses and disposes of hazardous materials.

Indicator 1: Chemical waste through Science Stores is minimized.

Science Stores in the Chemistry Department is charged with the task of distributing, inventorying and disposing of hazardous materials and waste used in academics. The inventory is intended to help reduce the need to purchase excess and therefore reduces the amount of chemicals that are disposed of unnecessarily. Science Stores is exploring new methods to monitor inventory. This will likely come with the use of new software and placing barcodes on products. In the 2010-2011 academic year Mount Allison increased their disposal budget. This was done to adjust for the increased cost of disposal, cleaning out of old labs and overall assurance that all chemicals are disposed of in the most environmentally friendly way. Many cyanides and arsenics were removed from Science Stores in 2010. The removal of chemicals that are particularly dangerous and seldom used is an ongoing process.

Sub-Indicator 1: Micro-scale chemistry is used.

As noted in the 2008 audit, experiments which use small quantities (mg) of chemical substances with the purpose to reduce waste, termed micro-scale chemistry, continues to be used in undergraduate labs. The use of micro-scale chemistry becomes increasingly important as student enrolment climbs.

Sub-Indicator 2: Natural solutions are used instead of chemicals where ever possible in Chemistry.

No new natural solutions were reported. However, it is reported that safer, less harmful chemicals are used when available and when applicable.

Indicator 2: Effective, environmentally friendly supplies are used.

Chemistry

Mercury thermometers continue to be used because they are more accurate and have a better range than alcohol thermometers.

Fine Arts

The Fine Arts Department has almost completely abandoned the use of Varsol in Printmaking. To clean the prints, most of the studio uses a soy based product called Soy Response, followed by Simple Green to remove the grease left behind by Soy Response. Each of these products is diluted with water before being used. The Printmaking Lab Technician reports using less than 20L of Soy Response and less than 4L of Simple Green per year. Printer's ink is considered to be non-toxic as it is a water soluble soy-based silk screening ink. Fine Arts has not switched to soy-based inks because they do not produce the same quality results as conventional inks. The Lithography lab continues to use Varsol for cleaning because it is most effective product for their intended use. Many of Mount Allison's Fine Arts students opt for turpenoid, a less toxic paint solvent than

turpentine. While it is a milder chemical, its lack of odour should not fool the user. As with turpentine, studios should still be properly ventilated when painting. No new less hazardous substitutes have been pursued since the last audit.

While the Fine Arts are a rather dangerous pursuit due to the potential exposure to hazardous materials, proper safety precautions are taken. Staff and faculty are WHMIS trained. Students are trained on safety protocol and all are required to wear goggles, apron, gloves and appropriate footwear when dealing with hazardous materials. Also, the labs and classrooms are checked during the monthly safety audit as per provincial regulation. When considering a new hire, an interview question that is always asked is "how do you promote safety in the studio?" The increase of digital photography may have decreased the use of chemicals used in traditional photo making; however, this has not been measured or reported. The use of rags has increased since the last audit. These oily rags are still sent to Canadian Linen for cleaning to be reused in the Fine Arts studio.

Custodial Services

Custodial Services continues to make an effort to minimize the use of harmful cleaning products. They now purchase all of their cleaning products from a company called Avmor. Receiving all products from one supplier has reduced the need for multiple deliveries. Of all of the products purchased from Avmor, 99% of them are considered to be green products. These products are either certified by *Environmental Choice*, *Green Seal*, *Designed for the Environment US EPA* or the *Avmor Green Approved Program*. These green products are used by custodians for daily and light cleaning. Non-green products are used on a weekly basis for heavy cleaning. Heavy cleaning includes surfaces with mineral build up and surfaces prone to staining. Dining Services purchases their cleaning products from EcoLab. All of their products are environmentally friendly.

Did you know?

Some food services electrolyse ordinary tap water containing dissolved sodium chloride to disinfect surfaces and food product.

Custodial Services purchased water ionizers for trial. These hand-held battery-operated sprayers claim to ionize tap water to clean and disinfect surfaces. Custodial Services requested the help of the Chemistry Department to determine the effectiveness of these water ionizers. The Department tested the manufacturer's claim that the ionized water acts as an antioxidant and could not find evidence to support its effectiveness. There is speculation that an increase of pH in the tap water may encourage antioxidant activities. The Chemistry labs at Mount Allison are not equipped to test for antiviral and antibacterial effectiveness and therefore did not comment on their ability to disinfect. Some Custodial staff use the water ionizers on a daily basis as a cleaner followed by a disinfectant.

Pool

Since 2008 the pool has undergone renovations. The purpose of the pool renovations was to repair the ceiling, install new lighting, resurface the pool bottom and install new dehumidification, heating and ventilation, plumbing, purification and sprinkler systems. These renovations were completed in January 2011. A few changes have been made to the pool water treatment. It is now disinfected with solid chlorine rather than liquid chlorine. Solid chlorine is easier to handle, requires no mixing, is more potent and is better for storage. The chlorine pellets come in non-reusable plastic pails. The pool goes through 1-2 pails of solid chlorine per week. Muriatic acid has been replaced with CO_2. CO_2 is used for pH control. It does not require any handling as it is stored outside in pressure tanks. There is no waste from this product and it is more affordable than muriatic acid. By reducing the amount these products are handled by staff, the likelihood of a spill or injury is greatly diminished. However, the large chlorine pails weigh 65 pounds each and can be quite dangerous for staff to carry down the stairs. The installation of sand filters and a UV filter has thus far eliminated the need to chemically shock the pool. Shocking the

Solid chlorine containers.

pool requires an injection of chlorine and other chemicals to bring the chemical and pH back to an acceptable level.

Indicator 3: All Hazardous Wastes are properly monitored, transported and disposed of.

Suppliers comply with WHMIS guidelines and are responsible for distributing MSDS sheets when filling a product order for hazardous material. Facilities Management has posted all of the MSDS sheets for the hazardous materials they use online. These information sheets are also available for quick reference on most suppliers' websites. Employees who directly handle and/or oversee the distribution of hazardous materials (e.g. instructors, technicians, truck drivers and managers) are specially trained on-site. Labelling is meticulous because unknown chemicals can be dangerous and not accepted for disposal until identified, which requires rigorous, costly testing. If chemicals are broken into smaller containers in house, a local label must be created.

Chemistry and Fine Arts

The Chemistry Department has switched to Atlantic Industrial Services to dispose of their chemical waste. Atlantic Industrial Services has simplified the sorting process for staff and students. In the past, chemical waste had to be sorted into as many as 33 different bins, called lab packs. Now the majority of the waste is sorted into one of two bins. In addition, select waste is sorted with compatible waste and placed in steel drums lined with vermiculate to absorb spills and shock during transportation.

All chemicals that Fine Arts are not equipped to dispose of go to Science Stores for disposal. Acids are neutralized before they are poured down the drain. The sinks in the Printmaking studio are equipped with marble, which causes any remaining acids to be neutralized before entering the plumbing system.

Biology and Psychology

Bio hazardous waste is a product of the Biology and Psychology Department. There are a number of federal government regulations that regulate how these departments conduct themselves. These inspection agencies include the Public Health Agency of Canada and the Canadian Food Inspection Agency. These agencies require every person in a lab to be trained. At Mount Allison training is given by briefing the students on lab safety protocol at the start of each lab. Students are also expected to wear the appropriate safety gear for each lab, i.e. gloves, goggles, close-toed shoes.

Animals and tissue comes from many sources (i.e. Ward's Natural Science in St. Catherine's Ontario or from faculty colleagues conducting research). Live fish for the AquaLab are often caught in the wild or come from a farm in Brookdale, PEI. The transportation of live fish is heavily regulated by the Department of Fisheries and Oceans. To decrease the risk of the spread of fungi, disease and bacteria certain precautions are taken. Everything and anything that may be contaminated is treated as such and is disposed of for incineration. Before items such as glassware and sharps are stored for disposal, they are sterilized in the autoclave. Labs are equipped with spill kits. Before any live animal is approved to be used on campus, the Animal Care Committee meets to evaluate the proposal. The Animal Care Committee is composed of an animal care technician, a student from either biology or psychology, a community member, a non-animal user faculty member, a veterinarian and a research scientist from Biology and Psychology. Once an animal, tissue or contaminated materials is ready for disposal, they are stored in a large freezer. This frozen bio hazardous waste, including sharps, from Biology and Psychology is usually picked up at the end of every semester by Stericycle in Moncton.

Health Services

The student Health Centre continues to send their sharps to the Sackville Memorial Hospital for disposal. Human resources is in the process of having sharps kits installed in a pair of washrooms in the McCain Student Centre and in a pair in the library. This will help divert bio hazardous waste from the Wet/Dry waste stream.

Buildings

Although some buildings at Mount Allison contain hazardous materials such as asbestos, lead, PCBs and mould, Facilities Management has processes in place to deal with these materials.

An asbestos inventory was created following extensive testing and University Policy # 2010 was formulated to outline the University's practices when it comes to dealing with asbestos. Proper planning and adherence to the detailed asbestos protocols are essential when disturbing any material which contains asbestos. Facilities Management staff is trained in the working with these materials on a small scale and experienced and knowledgeable contractors are used for larger operations. Asbestos is only considered hazardous when airborne so if left undisturbed it poses no threat.

Did you know?

Asbestos is forbidden for use in Canada, but it is still mined in Quebec and sold to countries without asbestos regulations.

The use of lead paint on campus ceased in the 1960's as manufacturers began eliminating lead from their formulas. When completing alterations or renovations to campus buildings dry paint samples are sent for testing to determine lead content. The results of these tests are given to contractors so that they may take the necessary precautions during renovations. Additionally, the Carpentry staff reduced its paint holdings (non-leaded paint) by 70%.This will help reduce the volume of paint waste from the University.

Mount Allison has made a concerted effort to remove Polychlorinated Biphenyls (PCBs) from campus. PCBs were primarily found in lighting at the University and have been removed in all known locations from campus.

Mould continues to be a threat to buildings and human health and Facilities Management's number one hazard. Mould can flourish anywhere there is oxygen, moisture and a food source. The presence of mould is identified by conducting indoor air quality tests. Dealing with mould includes cleaning or removing/ replacing materials. Often a preventive approach is taken by installing dehumidifiers, by completing building renovations that stop water leaks from the outside to the indoors and by using mould resistant materials. One of the big issues with mould is that you can never completely be free of it. Facilities Management spends a lot of time in ensuring that the right conditions are not prevalent for its growth and react as quickly as possible once mould is found.

Indicator 4: Household Hazardous Waste is effectively captured.

On campus, Household Hazardous Waste (HHW) such as household cleaners, paint, oils, antifreeze, batteries, propane tanks and aerosol cans are dealt differently than the Wet/Dry waste. Around campus and in residence buildings there are red bins that are designated for household hazardous waste (HHW). These products are picked up by a company called Newalta. Storing batteries indeterminately is not advisable because of the potential for corrosion and battery acid leaks. Ideally, batteries should be taped in groups to prevent the charges from interacting. The 2008 Waste Audit found a small amount of HHW in the Dry bags of the audited residence buildings. The WASWC HHW mobile unit comes to Sackville typically during times when most students are out-of-town. Other disposal options include taking items directly to the Co-Op, Home Hardware, WASWC or Wheaton's All-in-One.

Indicator 5: Environmental Protection

Places like the Ladies College Park and the Waterfowl Park provide recreational opportunities to campus community members as well as host a variety of plant and animal species. Given Mount Allison's close proximity to these ecosystems, the University has a responsibility and interest in helping protect them.

In 2009, a Facilities Management Hazardous Spill Response Policy (Facilities Management Safety Policy 2.08) was added to the Facilities Management Safety Manual. The policy outlines the types of

spills, who is responsible for clean-up, required training and reporting (see Appendix 6.1 for the policy less the annexes).

Summary

Due to federal and provincial regulation, hazardous materials are dealt with responsibly on campus. All departments that deal with hazardous materials on a regular basis make an effort to store and dispose of hazardous waste in a more environmentally friendly way. As it is required by these departments to use hazardous materials, they can always pilot alternatives and continue to minimize use. While the monthly safety audits could be on schedule more often, overall the University has good practices when it comes to dealing with hazardous materials.

Recommendations

Short Term

- Improve the efficiency of the Science Stores inventory system to minimize purchasing and waste.
- Install concrete in the fuel handling areas of the Heating Plant and Grounds Shop.
- Educate campus community members on the importance of separating HHW and provide more red bins.
- Continue to have all relevant departments consistently conduct monthly safety audits in their respective areas.

Long Term

- Continue to explore natural and less hazardous alternatives in all areas.
- Conduct a campus-wide hazardous spills risk assessment.
- Construct a containment dyke for the heating tank and the Grounds Shop's diesel tank.

Indicator	State of Affairs '05	State of Affairs '08	State of Affairs '11	Short Term Recommendation	Long Term Recommendation
Chemical wastes are minimized through Science Stores.	Expense of chemicals and their disposal provides incentive to keep wastes minimal.	New surcharges push the department to be innovative in purchasing and storage.	Adequate funding is provided to appropriately dispose of hazardous waste.	N/A	Create an accurate inventory system for Science Stores to minimize purchasing and waste.
Sub-Indicator: **I. Microscale laboratories used.**	The microscale method is implemented in the majority of chemistry classes.	Same.	Same.	Continue to promote the use of micro-scale chemistry to students, staff and faculty.	Utilize the latest techniques in micro-scale chemistry when appropriate.
II. Natural solutions are used instead of chemicals where ever possible.	Natural solutions are used in some classes	Same.	Same.	Continue to substitute with natural or less harmful products whenever possible.	

Effective, environmentally friendly supplies are used.	A few environmentally friendly cleaning supplies are being purchased, but the use of these products is not enforced. Most products are still purchased with price foremost in mind.	Some of our custodial supplies are pending Green Seal certification. Fine Arts is pilot testing a soy-based cleaner to replace Varsol.	Roughly 99% of the cleaning products purchased a certified by a regulating body. Fine Arts is using more soy-based cleaners.	Continue exploring environmentally friendly options.	Use environmentally sustainable supplies consistently throughout campus.
All hazardous wastes are properly monitored and disposed of. **Sub-Indicator:** **I. Household hazardous waste (HHW) is effectively captured.**	There is currently no database that includes all hazardous materials used on campus. In 2002, a HHW bin was added to each residence.	Full monitoring of all hazardous materials on campus will be government regulated and mandatory. HHW bins suffer from neglect and misuse. HHW is contaminating other streams.	Enforced the mandatory audits on a monthly basis. HHW bins are found in some locations on campus, though not always clearly marked.	Consistently conduct the audits on a monthly basis. Educate on the importance of separating HHW and provide more bins. These bins should be placed in each building.	Create a website that details all hazardous materials used on campus and their MSDSs. Reduce use of products with hazardous content.
Environmental Protection	No Recommendation.	Facilities Management is currently developing a Hazardous Materials Spill Response Policy to better enable its staff to respond to spills. As part of the policy's requirements, spill kits will be kept in the grounds garbage truck, the security/custodial truck, the Grounds Shop, and the Heating Plant.	The Policy has been developed, now it needs to be implemented.	Install concrete in the fuel handling areas of the Heating Plant and Grounds Shop.	Construct a containment dyke for the heating tank and the Grounds Shop's diesel tank. Conduct a campus-wide risk assessment.

Grounds Keeping

"In the twenty-first century, the campus landscape is being re-evaluated as a pedagogical resource for learning as well for its environmental benefits". – N. Jenks-Jay, 2002

Introduction

The grounds at Mount Allison are beautiful and inviting. Faculty, staff, students and the surrounding community take pride in the physical appearance of the campus. Mount Allison's attractive grounds and distinct campus are an important part of the University's image. In keeping with Mount Allison's goal to have an aesthetically pleasing campus, the Grounds Department is faced with many tasks including how to deal with weeds, what to plant, how to use resources most effectively and how to exist harmoniously with the surrounding natural environment.

Indicator 1: When pesticides are used, only 100% organic pesticides are used.

Mount Allison continues to follow the Integrated Pest Management (IPM) program. The IPM is a six step strategy which fosters a healthy life for plants. Staff monitor the insects, diseases, and weeds and only use pesticides and herbicides as a last resort spot treatment. For safety reasons, the sports fields are sprayed as needed (see Appendix 7.1 for the IPM). A recent change in provincial legislation may limit the quantity and area that Grounds can use pesticides. The ramification of this legislation is still unclear. Though Mount Allison rarely uses pesticides, the Town of Sackville by-law No. 201 regulates the use of pesticides on public and private property. The by-law states that if pesticides are to be applied to an area that a warning sign must go up 24 hours prior to spraying and remain 48 hours after.

Indicator 2: Yard Waste is composted.

Yard waste continues to be composted on campus. Grounds uses the compost as a soil amendment. The Windrow composting method is used due to the large quantity of yard waste collected. The large quantities are mechanically agitated to introduce oxygen into the compost which is necessary for aerobic decomposition. The excess compost produced by Grounds is then given to the Town of Sackville and most recently to the Mount Allison Farm.

Indicator 3: The landscape design incorporates native New Brunswick plant species.

Roughly 50% of the trees on campus are native species. However, the heritage of a species is not a primary consideration when selecting varieties for planting. Factors that are given more weight include drought resistance, ability to withstand harsh weather and susceptibility to disease and parasites. There are also stringent regulations for the transport of trees to limit the spread of plant diseases. Plants are purchased from nurseries from as far away as Ontario. Buying from local nurseries does not always mean that the plants are grown locally. Which plants are purchased from which nursery is largely based on the quality of the plant, the variety of the plant and the availability. A plant that is watered, pruned and fertilized properly in its earlier stages of life will be more resistant to pests and severe weather conditions and will therefore live longer. All of these factors need to be considered to remain sustainable.

The location where trees and plants are planted is given careful consideration. Their placement is dependent on temperature, sun, soil, slope, and proximity to buildings.

Currently it is common practice for Grounds to replace every tree that has been removed from Mount Allison property with three new trees.

Indicator 4: The landscape is designed to use minimal resources.

Mowing and trimming continues to occur around campus. It is a safety and aesthetic requirement. It is difficult to track the carbon footprint of the mowers and trimmers because their efficiency is measured by hours per litre rather than by kilometres per litre. Grounds possesses propane wands for incinerating weeds along walk ways. Though it is low toxic way of eliminating unsightly weeds, they do not kill the root system of the weed. Additionally, when these wands are used they require large non-refillable propane. These are hazardous waste and need to be disposed of properly. For the reasons listed above, the wands are seldom used.

As indicated in previous audits, Mount Allison's landscaping is designed to increase water efficiency. Plant varieties that require little water are chosen and mulch and compost are applied to increase water retention. There is little to no irrigation done on campus; the exception is when a season is particularly dry. The only plants that are watered are trees, flowers, and shrubs in their first year after planting and all annual varieties. Of the sports fields, only the Park Street field is watered regularly. This field is watered regularly with an automatic sprinkler because it has a sand base which causes the water to drain from it more quickly. In the last couple of years Facilities Management has had maintenance problems with this sprinkler system. As a consequence, the field has not been watered as effectively as required placing a strain on the condition of the field in the later part of the sports field season.

Indicator 5: The grounds are used for educational purposes.

Labelling plants and trees for education purposes has not been completed. There is a shared desire between faculty and Facilities Management to map the campus' grounds and plants so that they may be used as an educational and planning tool. When planting new areas, Grounds has worked with faculty to try to order plants which would be beneficial for educational purposes.

The Grounds Superintendent has also assisted with commerce class projects involving landscaping in the Sackville community.

Indicator 6: Salt use is reduced.

The heavy use of road salts can lead to damage to vegetation, organisms in soil, birds, and other wildlife. Salt continues to be used on campus. The amount of salt used each winter varies depending on temperature and conditions. In the winter of 2010-2011 a new salt spreader was purchased. From the time the salt spreader was put into operation, there were no reported injuries due to falls on slick walkways. This spreader can be adapted to use brine as well as salt granules. Sand is used in extreme cold when salt is no longer effective.

Municipalities around Canada have implemented the use of brine as a pre-wetting brine before spreading salt granules. For example, the Nova Scotia Department of Transportation and Public works were able to reduce their salt use by 10% when using the pre-wetting technique on roads. According to research conducted by the Government of British Columbia pre-wetting also has the advantage of:

- decreasing the amount of road salt or sand required without decreases in level of service,
- pre-wetting does not necessarily require large and expensive equipment,
- savings in salt, time and money can be significant.

Grounds hopes to test pre-wetting with brine this coming winter. They have explored alternatives to salt for campus-wide applications, but found them not to be economically and practically viable for the campus. While some alternative options provide traction, they do not cause melting, and thus increase the risk of injury.

Summary

The Grounds Department continues to incorporate environmental considerations into its routine operations. Species and designs are chosen to minimize water and pesticide use. Though there are few alternatives to salt, Grounds has found new ways to

minimize its use without negatively impacting safety. Grounds is committed to ensuring the environmental sustainability of the Mount Allison landscape without the guidance of a specific Grounds section in the Environmental Policy. Overall, Grounds aims to make the Mount Allison landscape design safe, low cost, low maintenance and low risk while maintaining its practicality and attractiveness.

Recommendations

Short Term

- Evaluate the feasibility of collecting rain water for watering.
- Continue posting educational signage and promoting green spaces on campus for all members of the University community to enjoy.
- Student project collaboration to create a map of the plant species for educational purposes, and to use that information to benchmark internally.
- Institutionalization of a Grounds Policy.
- Source more plants locally. Avoiding leaving the Maritime Provinces.

Long Term

- Continue to explore ways to reduce salt use.
- Continue to implement the IPM aggressively to help work towards a 100% pesticide free campus.

Indicator	State of Affairs '05	State of Affairs '08	State of Affairs '11	Short Term recommendation	Long Term recommendation
Pest control	Mt. A uses a technique called Integrated Pest Management, applying pesticides (on sports fields) as a last resort.	No change from last audit.	Though provincial legislation on pesticide use has been changed, no changes have been made since last audit.	Continue using IPM.	No Recommendation.
Yard waste is composted	Yard waste is composted on site and used as mulch.	No change from last audit.	Yard waste is composted and used as soil amendment. It is also given to the Mount Allison Farm and other community projects.	Continue to compost yard waste.	No Recommendation.
Landscape design and native New Brunswick plant species	Native species are widely planted on campus. Currently about half of the trees on campus are native species.	No change from last Audit.	No change from last audit.	Source more plants locally. Avoiding leaving the Maritime Provinces.	Maximize the percentage of New Brunswick native species on campus while maintaining diversity.

Grounds for educational purposes	Grounds continues to partner with several departments on campus to use grounds as a laboratory, space for art installations/performances, etc.	The collaboration is still going on and students are being encouraged, now by signage, to use the grounds for educational purposes.	Collaboration among departments is still occurring.	Continue to encourage both faculty and students to use the grounds to enhance learning. Elicit the help of students to complete a map of the grounds and the plant species.	No Recommendation
Salt use on campus	In winter of 2004 a new salt machine was purchased that reduces the amount of salt used on campus by half.	This spreader is still being used and the salt amounts have stayed the same since the last audit.	A new salt spreader was purchased in the winter of 2010-2011. It has the ability to spread brine and salt graduals.	Implement the use of brine on campus to reduce the overall use of salt as intended.	Continue to explore ways to reduce salt use.
Minimize resource use	Trim mowing has been significantly reduced. Drought resistant landscape exists. Watering is only done on sports fields and on some beds when plants are newly transplanted.	Currently there are gas powered lawn care machines that run almost all day every day. Only the Park St. field is watered regularly. Annuals and other plants in their first year are watered. Drought resistant species are chosen.	Similar to last audit. Propane wands are seldom used.	Log the use of mowers and trimmers. Consider collecting rain water for watering.	Institutionalization of a Grounds Policy.

New Buildings and Renovations

The University will endeavour, under the supervision of Facilities Management, to minimize the ecological impact of the construction, maintenance and operation of the buildings on campus. (MTA Policy 2101)

Introduction

There are a spectrum of benefits to incorporating sustainability into buildings and renovations. These include energy savings, reduced maintenance needs, lower impact on the surrounding environment, healthier indoor spaces, and resource savings. Building sustainably can consist of salvaging materials, making use of passive energy, using less hazardous materials, selecting the right materials for the right project, or using low maintenance materials. Considering environmental factors is crucial in the design stage of a new project because including them as an afterthought can be costly and difficult. Building and renovating in an environmentally sustainable way is a process that should be given careful consideration and planning and post-secondary institutions are no exception.

Indicator 1: Response time for major building maintenance and repair is monitored and minimized.

The Mount Allison campus has many generations of buildings and keeping up with their maintenance is essential to ensure that each building can be used for their intended purpose. As the majority of buildings were constructed in the 60's and the average building infrastructure lifespan is 40 to 50 years, it can be stated that the majority of campus buildings require renewal.

From the last audit, Deferred Maintenance (DM) is defined as maintenance work deferred to a future budget cycle while the Current Replacement Value (CRV) is defined as the total amount of expenditure in current dollars required to replace the Universities facilities to its optimal condition. Together, these two sums are used to generate the Facilities Condition Index (FCI) which can be used as a general assessment of the overall status of the Universities infrastructure.

Mount Allison has not kept up with its renovations and maintenance of existing buildings. Mount Allison's FCI is estimated to be approximately 25% which is an indication that Mount Allison is falling behind in its management of its DM (see Figure 8.1). As DM only worsens over time, in the long term serious problems can result if appropriate decisions and funding is not allocated to control the FCI. It should be noted that buildings with an FCI of 30% or more are candidates for replacement.

Figure 8.1 The Facilities Condition Index (FCI) is a "comparative indicator of the relative condition of facilities" expressed as a percentage. It includes everything from roofs to mechanical systems.

$$\text{FCI (\%)} = \frac{\text{Deferred maintenance (DM)}}{\text{Current replacement value (CRV)}} \times 100$$

If the FCI is:	Condition Rating:
0 to 5%	- Good
5 to 10%	- Fair
Over 10%	- Poor
Approx 20%	- Most Atlantic-Canadian universities

For small maintenance items, the Facilities Management "Fix It" program has been successful in simplifying the reporting procedure for the University community to identify issues requiring Facilities Management response. When an issue is spotted, such as a leaky faucet or a faulty light switch, campus community members can report the issue to Facilities Management via fixit@mta.ca. By addressing maintenance problems early in their development, Facilities Management can solve many potential issues quickly and with the minimum amount of resources. Allowed to go unresolved, these issues can grow into much bigger problems that require more intensive resources.

Facilities Master Plan Update

With the completion of the Wallace McCain Student Centre, the Facilities Master Plan is on to its next phase, the Fine and Performing Arts Centre. The statement of requirements and some preliminary conceptual design work has been completed on this $30 million project. Facilities Management tries to use the Facilities Master Plan to focus its maintenance activities on buildings to maximize the benefit of the A&R plan. As the Facilities Management webpage is updated more information regarding the Facilities Master Plan will be available online.

Indicator 2: Prior to new building or renovation projects an environmental impact analysis (EIA) is completed.

The federal government requires comprehensive EIAs when building on a site that was previously unoccupied by a building. As the majority of projects are replacement or renovations of existing buildings and their components, assessments are not required for most Mount Allison projects. Depending on the project, the specifications and /or applicable legislation would dictate its environmental standards. Any required assessment is completed during the design stages of a project by the consultant hired to perform the design.

Indicator 3: Building construction or renovation makes use of green building techniques, materials and disposal.

Where practicable, green techniques and materials are specified and used by Facilities Management staff and contractors. Low VOC paints and adhesives, cold applied roofing, double glazed windows, low flow toilets, heat recovery on ventilation systems, cistern installation to supply water for toilets are just a few examples of products used in previous projects. Forbo Flooring Systems products have been used on a trial basis around campus. Environmental sustainable materials are used to make these flooring products and they are virtually maintenance free. Other flooring options, particularly vinyl, require regular waxing and are not made with renewable materials. Some furniture is purchased with the environment in mind, but the staff has identified this as an area for improvement.

Construction materials are available which are made with post-consumer materials, and where applicable these products are included in renovation or construction projects depending on the project and its specific design. Where applicable, Facilities Management seeks out and tries a variety of sustainable products as indicated above.

Before removing an existing building or starting renovations, old materials and equipment may be salvaged. At Mount Allison, the building is initially reviewed by our Facilities Management shops for salvage opportunities. Depending on the situation, the public may be given the opportunity to salvage and purchase materials from the building. In the end, all the materials removed are the property of the contractor and they salvage what they can and remove the remainder to WASWC as construction waste.

What is “Green Globes”?

“Green Globes is an interactive, online green building assessment and design protocol” (Green Globes). How it works: Mount Allison either performs the assessment, which will then be certified by an independent third-party verifier, or the University can chose to have the verifier perform the assessment and certify it online simultaneously. “Buildings that receive a certification assessment score of above 55% are given a rating of three to five globes” (Green Globes).

Based on conversations with design professionals, Facilities Management has decided to utilize the Green Globes process for its green building design protocol for major renovation and construction projects. The University has hired the services of Zeidler Partnership Architects, an international architecture firm, to design the new proposed Fine and Performing Arts Centre. Zeilder is a member of the Canada and US Green Building Council and has ten Leadership in Energy and Environmental Design (LEED) accredited professionals on staff. They will follow the Green Globes assessment process for

their design with the goal of attaining four Green Globes for the project.

Summary

Mount Allison, like other similar institutions, struggles to keep up with DM. It is imperative that Mount Allison and Facilities Management continue to reduce costs while also reducing their carbon footprint, water consumption and overall environmental impact. The importance of building and renovating sustainably is critical for the development of Mount Allison. With ongoing renovations and building projects it is in the best interest of the University to continue using sustainable materials and building techniques. Not only can sustainable buildings be financially and environmentally practical, they can be used as tools to maximize stewardship potential by posting educational panels where such methods have been used. Post secondary institutions are often looked to for leadership on environmental sustainability. Building sustainably is a signal to the campus community members and the public that Mount Allison is planning for the long-term and is concerned about the environment to which it belongs.

Recommendations

Short Term

Save more water

- Harness storm water for flushing in new and renovated buildings.

Save more energy

- Increase usage of existing space by holding evening classes and reduce square footage

Raise awareness about green building techniques

- Self-promote by installing permanent education panels near resource conservation features.
- Build with an open-concept design in mind by replacing individual offices with cubicles.

Minimize the physical impact of buildings

- Conduct class impact assessments for smaller projects as frequently as possible.
- Use low maintenance materials when practical.

Maximize stewardship potential through facilities

- Ensure that all furniture and are purchased with the environment in mind.
- Document all pilot projects and trials.
- Create a standards document or policy for building materials.
- Use the most sustainable building materials available.

Long Term

- Develop strategy to quantify and reduce Deferred Maintenance.
- Continue with projects that increase energy efficiency such as replacing windows, caulking windows, and replacing roofing.
- Obtain green building certification for FM staff members.

Indicator	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Goals	Long Term Goals
Response time for building maintenance and repairs is monitored and minimized.	Repairs are prioritized according to necessity. The FCI of Mt. A is far from what it should be, an indication that a great deal of deferred maintenance remains on campus and the facility is not in great condition.	It is apparent that our facilities are not in great condition even without the FCI. Facilities Management is well aware that the vast majority of the campus buildings will reach 50 yrs. of age before the next audit. Construction on major buildings echo funding trends. Preventative measure must be taken now to mitigate an increasing stockpile of problems.	No new information. Many buildings are up for renewal.	Promote use of Fix-it. Maintain funding to stabilize current FCI rating.	No recommendations.
Prior to new building or renovation projects an environmental impact assessment (EIA) is completed.	An environmental consultant was brought in for the new Fitness Centre and Campbell Hall projects. Mount Allison will continue to use his services on future projects.	A design metric continues to be followed for large projects aided by an environmental consultant.	Unchanged since last audit.	Conduct class impact assessment for smaller projects.	No recommendations.
Building construction or renovation makes use of green building techniques and materials.	Environmentally friendly materials continue to be pilot tested.	Many additional techniques are being premiered at Mt. A in the new Student Centre. Materials are largely locally procured and environmentally friendly materials are being requested. Our consultants are challenging manufacturers' claims.	Some environmentally friendly flooring has been installed. The grey water cistern in the Student Centre has been a success. On-going maintenance continues on the HVAC system in this building.	Install educational panels where sustainable building techniques and materials exist. Document all pilot projects. Use low maintenance materials when available.	Develop environmental performance goals and only build in a sustainable manner. Develop strategy to quantify & reduce DM.

Energy

The University will endeavour, under the supervision of the Department of Facilities Management, to minimize energy consumption, reduce emissions and reduce the consumption of fossil fuels and other non-renewable energy sources. (MTA Policy 2102)

Introduction

With new facets of energy production and consumption being brought to the forefront of technological, social, and economic decisions, it is clear that energy is a hot topic in the enviro-sphere, as well as by the average office building water cooler. Coal, oil, petroleum, and natural gas are currently supplying around 75% of Canada's total energy consumption[1], while renewable energy technologies are slowly gaining momentum and credibility. Higher education is often thought of as a place to nurture leadership and action, and therefore more and more institutions are taking the lead to promote "cleaner" sources of power.

On the consumption end of the relationship, conservation is integral. Awareness about energy usage means making conscious decisions to reduce energy consumption. Reducing the demand for energy can both reduce fossil fuel use as well as allow for investment in renewable energy technology.

Since the 2008 audit, there have been many changes made at Mount Allison, both small and large. Several highlights include:

- 3 of the 4 boilers used to heat steam, which heats much of campus, are equipped with duo-fuelled boilers and are currently being powered by natural gas which, while still a non-renewable source, emits less CO_2 and other pollutants when burned than previously used Bunker A oil

Figure 9.1: A view of the exterior of Mount Allison's physical plant.

- Energy data from heat, electricity, and transportation is being centrally compiled by Financial Services for calculating University's carbon footprint for 2009/10 and 2010/11
- The institution has established a Green Evolving Fund: financial savings from projects that reduce energy and greenhouse gas emissions are put back into a specific budget to fund further reduction projects

Indicator 1: Total energy consumption has decreased

Sub-indicator 1: A baseline has been set as a standard to measure improvement in Mount Allison's energy consumption

Financial Services has calculated the University's carbon footprint for the past two years. This total figure incorporates University-funded travel, heat and power. This means many types of energy use are being looked at by a central body, which is a huge step in moving forward and setting targets for improvement. See

[1] http://data.worldbank.org/indicator/EG.USE.COMM.FO.ZS/countries

Table 9.1 for energy and fuel consumption by Mount Allison for the past several years.

Facilities Management has decided to use Fiscal year 2010/11 as the baseline for the Green Evolving Fund. This decision was made because it is the last year in which the University's energy consumption figures are not affected by projects resulting from the Fund.

It was noted that although data exists from electricity and steam metering systems for individual buildings, a lack of resources has left this information relatively untouched.

Table 9.1: Mount Allison's fuel and electricity consumption by fiscal year. Data provided by Financial Services.

Fiscal Year	Electricity (KWH)	No. 5 Heavy Oil (Litres)	No. 2 Light Oil (Litres)	Low Sulfur Diesel (Litres)	Propane (Litres)	Natual Gas (GJ)
2005	11,568,781	2,324,489	78,007	n/a	11,722	0
2006	11,441,557	2,082,483	64,122	5,849	27,539	0
2007	11,241,025	2,075,591	69,366	8,349	34,636	0
2008	11,533,708	2,037,027	68,360	8,165	35,765	0
2009	11,273,610	2,252,999	62,973	10,026	38,184	0
2010	11,336,050	2,050,809	6,233	10,269	5,305	3,591

Sub-indicator 2: Buildings are constructed or renovated incorporating energy efficient technology

The majority of renovations and building construction incorporate energy efficient technologies. Environmentally responsible options are considered based on environmental stewardship, financial feasibility, and future plans for the campus' built environment. The Green Evolving Fund provides further opportunities for energy efficient technology by applying funds to an energy-saving portion of a larger project that might otherwise not have the financial means to do this. Refer to Stewardship (Chapter 1) for more information on the Green Evolving Fund and New Building and Renovations (Chapter 8) for information on energy efficient technologies.

Sub-indicator 3: Buildings not in use are closed

No change since the previous audit. Buildings are closed when not in use and winterized if applicable to prevent damage from weather. We recommend that this indicator be removed as it is standard practice and unlikely to regress given economic motivations of not servicing unused buildings.

Sub-indicator 4: The HVAC systems are monitored and repairs are done in a timely fashion

No change since the previous audit. The HVAC system is monitored by the central computer system and repairs are carried out whenever a problem is noticed.

Indicator 2: Renewable energy is used

While there has been a shift to natural gas instead of Bunker A oil, renewable energy has not come to the forefront at Mount Allison. NB Power, the University's electricity supplier, aims to purchase 10% of its power from renewable sources by 2016. The TransAlta Kent Hills Wind Facility, opened in 2008 and expanded in 2010, has 150MW capacity to help NB Power reach its target. Plans for a wind farm in Aulac, mentioned in the 2008 Audit, are progressing much more slowly than originally anticipated.

Many campus community members stated that options for renewable energy on the part of Mount Allison are on the radar for investigation and that the main challenges are related to funding, payback periods, reliability of technology, and in-house capacity to

implement these technologies. It was also mentioned that Mount Allison is first and foremost a university, so resources are directed towards academics before other projects like renewable energy can be considered. It was also mentioned that the establishment of the Green Evolving Fund is seen as an opportunity for investment in renewable energy production, especially as the fund grows.

Indicator 3: Government initiatives are monitored to ensure participation

Government initiatives are being measured on a departmental basis. Specifically, University Advancement and Facilities Management highlighted taking advantage of these programs to help make projects economically viable. For example, Athletic Centre renovations received support from Recreational Infrastructure Canada and replaced out-dated technology with newer, more efficient systems.

Summary

It is clear that, at the time of this Audit, Mount Allison is in a position to initiate great progress for energy stewardship. Many members of the campus community highlighted the Green Evolving Fund as a source of innovation and possibility for the institution to move forward. As the second year of this Fund begins, it is clearly having a positive impact on both infrastructure and demonstrating commitment on the part of the University. In terms of awareness, there has been little progress in recent years aside from smaller campaigns for energy-conscious behaviour implemented by administration, individuals, and student groups. Even the GEF—which has staff and faculty excited—has not yet been well-advertised to the greater campus community.

Recommendations

Short Term

- communicate initiatives to the campus community to foster further progress and a sense of responsibility for everyone involved with Mount Allison
- promote Green Evolving Fund and encourage project ideas
- explore the option of purchasing power from an alternative energy supplier that generates electricity using renewable sources (i.e. Bullfrog Power)
- actively engage with the Town of Sackville, community groups such as EOS Eco-Energy, and greater community members to stay mutually informed and facilitate collaboration
- use centralization of energy data for carbon footprint calculations as a springboard to set progressive achievable energy consumption reduction targets
- support Facilities Management in the hiring of an Energy Manager or develop an alternative strategy to record backlog and future electricity and steam consumption numbers digitally to track trends and ensure that faulty meters are repaired

Long Term

- Create a formal Energy Plan for Mount Allison, complete with strategic direction, stages of implementation, and short and long term goals. Include the following:
    - Consideration of co-generation in the physical plant
    - Formal plan for the vision and mandate of the Green Evolving Fund; communicate this to the greater community and open doors for collaboration with outside organizations and projects
    - Explicit strategy for tracking indicators in relation to metering technology and responsibilities for keeping to the vision of the Energy Plan; consider a committee
    - Commitment to actively explore the viability of renewable energy options and implement them as decided in the Plan

Indicator	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Recommendation	Long Term Recommendation
Total Energy Consumption has decreased	Consumption increase since 2002.	Consumption decreased Short term goal: 10% reduction Long term goal: 30% reduction.	Electricity consumption has fluctuated Natural gas being used; decrease in propane and oil.	Use centralization of energy data for carbon footprint calculations as a springboard to set energy consumption reduction targets that are progressive and achievable.	Create a formal Energy Plan for Mount Allison, complete with strategic direction, stages of implementation, and short and long term goals. Include the following: Consideration of co-generation in the physical plant Formal plan for the vision and mandate of the Green Evolving Fund; communicate this to the greater community and open doors for collaboration with outside organizations and projects Explicit strategy for tracking success and indicators in relation to metering technology and responsibilities for keeping to the vision of the Energy Plan
A baseline has been established as a way to measure changes in consumption	University had data but did not track baseline.	No baseline; plans to do it with 08/09 data.. Short term goal: -make baseline as recommended in past 2 audits.	Heating and electricity data are tracked by Fin.Services as part of Carbon Footprint FM has set Fiscal Year 2010/11 as a baseline.	Seek input from various departments involved to establish baseline Support a strategy to: record backlog and future electricity and steam consumption numbers in a digital format to track trends and ensure that faulty meters are fixed.	
Buildings are constructed or renovated incorporating energy efficient technologies	New building and renovations use these technologies.	No change.	No change.	Create set of standards to create firm commitment and consistency within the institution and projects.	
Buildings not in use are closed	Unused buildings are closed or winterized.	No change.	No change	Indicator recommended for removal from Environmental Policy and future Audits.	
The HVAC systems are monitored and repairs are done in a timely fashion.	Computer system monitors HVAC Repairs are usually performed that same day as detected.	No change.	No change.	No recommendation.	

Alternative energy sources are used.	None used due to cost.	No change. Short term goal: -use one alternative energy source Long term goal: -half of energy from alternative sources.	No change.	Continue to explore possibilities within Green Evolving Fund. Explore the option of purchasing power from an alternative energy supplier that generates electricity using renewable sources (i.e. Bullfrog Power).	Commitment to actively explore the viability of renewable energy options and implement them as decided in the Plan.
Government initiatives are monitored to ensure participation in relevant programs in the areas of pollution reduction and energy efficiency	Government incentives are monitored on an individual or departmental basis.	No change.	No change. Audit showed visible success in utilizing funding for projects.	Actively engage with the Town of Sackville and community groups such as EOS Eco-Energy to stay mutually informed about projects and opportunities for collaboration.	

Water

The University will endeavour, under the supervision of the Department of Facilities Management, to minimize water consumption. (MTA Policy 2101)

Introduction

Between the Great Lakes, the Bay of Fundy, and the mighty Tantramar River, it is often easy to take access to water for granted. Understanding how water ebbs and flows throughout Mount Allison helps identify areas for conservation and adjustment to best use this precious resource.

While Mount Allison is somewhat independent from the Town of Sackville in terms of operations for heating, waste, and grounds-keeping, the University is dependent on the town's services for water. The campus is a demanding customer for water treatment and disposal as it accounts for approximately 1/3 of the Town of Sackville's water demand. The water treatment plant, along with its two artesian wells, is located several kilometres north-west from downtown. The site is operated under contract by Veolia, a company that manages it virtually from their central office in Moncton. Water is treated on-site using green sand filters (to remove excess mineral content), chlorine (to disinfect), caustic soda (to maintain pH), and phosphate (to keep pipes free from mineral build-up). Due to the plant being at a higher elevation than the area it serves, water flows naturally down to campus and residential Sackville.

Several recent developments in relation to water that are not directly pertinent to the Audit indicators but should be noted are as follows: new since 2009 is the use of the water treatment site to house a surplus of back-up chlorine tanks as part of an influenza emergency preparedness strategy for Sackville; in June 2010 the construction of the water tower was completed (its primary purpose is to be an emergency source of water in case of regular supply depletion due to fire).

Indicator 1: Total potable water consumption

The amount of potable water purchased has been on a decreasing trend for the past decade. This cannot be attributed to one single factor, but is likely the result of many conservation and efficiency-increasing projects. See Figure 10.1 for trends in the years 2001 to 2011.

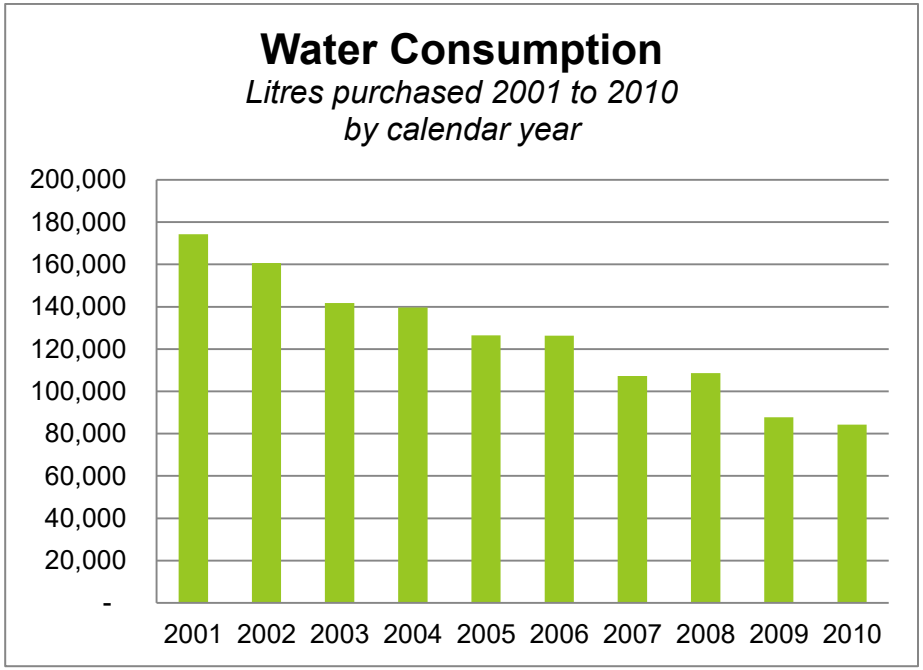


Figure10.1: Mount Allison's potable purchased water consumption from 2001-2010 by calendar year (Jan-Dec). Graph provided by Mount Allison Financial Services.

Indicator 2: Storm and grey water reuse

There is no wide-scale reuse of storm and grey water on campus. The Wallace McCain Student Centre's rainwater collection system is used to flush toilets and urinals. The Jennings dishwasher continues to re-use water several times.

Indicator 3: Leaking Fixtures

Fixtures that are leaking are fixed as soon as reported or recognized. There is a role for the campus community to play in water conservation by reporting leaks to 'Fix-it'(also see Chapter 8-New Buildings and Renovations). When blitzes are done in buildings by Carpentry and Paint Shop staff, meaning that they go through every room to check for maintenance, they will report water fixture problems that they notice; however, there are no explicit water fixture blitzes done by plumbing staff.

Indicator 4: Water Metering

No change since the previous Audit. Buildings are metered for water consumption which is used for the Town of Sackville's billing. Mount Allison pays the same price as town residents for water. Wastewater is not metered and the institution is charged a fee on all water consumed to account for the treatment of wastewater.

Indicator 5: Pressure testing for leaks

No change since 2008. There is no specific pressure testing for leaks; however, the water is always under pressure so this testing is a constant state. We recommend that this indicator be removed as it does not accurately evaluate Mount Allison's commitment to responsible water use.

Indicator 6: Efficiency of Fixtures

Low flow fixtures are installed in all new or renovated buildings and old fixtures are being replaced on a 'worst-first' and as-needed basis. Water fixtures in all residence buildings were inventoried in early 2009 to plan for the implementation of a project to install new water conserving plumbing products such as shower heads, aerators, toilets, and flush-o-meter valves. The replacement project was completed in Fiscal Year 09/10. In laboratories, many of the water-cooled refrigerants have been replaced with air-cooled appliances. Water fixtures in academic buildings have not been inventoried, which was reported to be helpful when writing proposals and considering future improvement projects.

Waterless urinals were tested in Facilities Management but later removed. There was little explanation given to Custodial about the pilot project, which resulted in resistance from staff to perform the new maintenance procedures required for their upkeep. An unpleasant odour and uncertainty regarding cost of upkeep compared to water-using urinals were also factors mentioned.

Indicator 7: Motion Detectors Installed

Motion detectors have been installed in certain locations on campus where it is deemed appropriate, as in some situations they are too sensitive or will not lessen water consumption. When new buildings are constructed, or old ones renovated, the practicality of motion detectors is considered.

Indicator 8: Percentage of wastewater treated

All wastewater is treated by the Town of Sackville. Wastewater is pumped to the sewage lagoon in the Sackville Industrial Park, with much of it passing through a grinder pump to reduce the size of solid materials. The lagoon ponds are approximately 5 feet deep, and solid waste naturally settles to the bottom; water then leaves the treatment plant to enter the Tantramar River. Preliminary research revealed that while more extensive and effective technologies exist to treat wastewater, this system is generally regarded to be socially, economically, and environmentally appropriate for communities similar to Sackville.

Indicator 9: Storm water contaminant separations/collection

No change since 2008. None of Mount Allison's storm drain s connect to a collection/treatment system. Along with much of Sackville, storm water from campus drains into the Waterfow lPark where it settles before eventually flowing into the Tantramar River and the Bay of Fundy. While storm water is not actively treated, it is

arguable that the Waterfowl Park acts as a sort of settling pond for biological processes to work at treatment

Indicator 10: Projects are undertaken to decrease water usage

Departments continue to make individual efforts to limit water use. For example, Grounds Keeping uses drought-resistant landscaping to minimize water use (see Chapter 7). When funds are available or fixtures need to be replaced, water-efficient technology is a primary consideration. See Indicator 6: Efficiency of Fixtures. There is no campus-wide education program about water conservation or about retrofits done.

Indicator 11: Ground water quality

The watershed of the Tantramar River continues to provide high quality water to the Town of Sackville and Mount Allison community. Of note is the King St. Remediation project which involves decontaminating the ground near the King St. Parking; chemicals leeched into the area from the foundry that used to be in this location, and the remediation is ongoing.

Indicator 12: Backflow prevention

There has been noticeable progress made since 2008. Backflow prevention systems have now been installed on main piping (i.e. sprinklers, system feeds), and new installations are done with backflow prevention. As well, existing infrastructure is being retrofitted when possible to insert backflow systems. As a part of the follow-up to a survey done in 2006 and revised in 2008, more backflow systems were installed in academic buildings in 2009. The Town of Sackville passed a backflow prevention by-law addressing this issue in May 2011; this has not affected Mount Allison as the institution was already up to standards from its regular practices.

Figure16.2: One of Sackville's sewage lagoons in the Industrial Park

Summary

While many aspects of water use have not changed since 2008, there are several key areas that have greatly improved. Residences have been equipped with water efficient fixtures and have been inventoried to help with future projects. Academic buildings have not seen the same level of attention and this is an area that should be targeted for improvement. The institution must be commended for its ongoing installation of backflow prevention systems that has been both regulated as well as voluntary depending on the instance, which suggests a commitment to environmental stewardship. Behavioural and educational aspects of water use have not been tackled by the University as a whole. Communicating the importance of water-saving practices (i.e. short showers) as well as raising awareness about infrastructure progress (i.e. low-flow appliances) is a critical area that Mount Allison needs to pay attention to in order to have a water-conscious campus.

Recommendations

Short Term

- implement a coordinated, campus-wide education campaign about water use, to include
    - importance of reporting leaky fixtures promptly
    - low-flow technology that is in place, especially Residences
    - planned projects to increase water efficiency
    - this could be done by Facilities Management in collaboration with individual student projects and/or campus groups
- inventory all water fixtures in academic buildings to formalize "knowing what is there" and to plan for future projects
- it is recommended that academic buildings have low flow toilets and aerators installed
- include plumbing staff on maintenance blitzes in all buildings to thoroughly check for leaks and inefficiencies

Long Term

- consider rainwater collections systems similar to Wallace McCain Student Centre for future renovations and new buildings on campus

Figure16.3: Inside the Veolia water treatment plant

- look into improving efficiency of all fixtures on campus and new ways to decrease water consumption; consider including in or establishing a fund similar to the GEF for projects that save water and create savings for Mount Allison

Indicator	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Recommendation	Long Term Recommendation
Total potable water consumption	Average of 177 million litres (Between 02/03 and 04/05).	Average of 128 million litres of water Short term goals: -establish a baseline Long term goal: -25% reduction over next 15-20 years.	Total water consumption continues to decrease. No formal targets or baselines are in place; trends are being tracked by Financial Services and Facilities Management.	Continue tracking of trends; consider setting formalized baseline and targets.	Decrease potable water consumption.

Storm and grey water reuse	Mount Allison does not reuse grey water.	No change Short term goal: -reuse 25% Long term goal: -reuse 50%.	Initiative has been shown. Student Centre has rainwater collection for toilets and urinals.	Promote technology in Wallace McCain Student Centre.	Consider similar collection systems in future renovation projects and new buildings.
Leaking Fixtures	Most repairs are done within 24 hours of detection.	No change Good job ladies and gentlemen!	No change. System relies on campus members reporting problems.	Spearhead on-campus education for importance of reporting leaks Include plumbing staff on maintenance blitzes.	No recommendation.
Water Metering	All campus buildings are metered for water use. None are metered for waste water.	No change. Long term goal: Collaborate with the Town of Sackville for a wastewater metering plan.	No change. General assumption that wastewater approximately equals water consumed.	No recommendation.	No recommendation.
Pressure testing for leaks	Mount Allison does not pressure test for leaks.	No change.	No change.	Removal of indicator suggested as all water is under pressure so specific testing not necessary.	
Efficiency of Fixtures	-Inefficient fixtures are replaced with low flow technology during renovation or new building construction. -Alternatives to water saving appliances have not been considered.	-No change in procedure -New Student Centre uses rainwater cistern for toilet flushing.	No change in procedure. Progress is being made. Since 2008 all fixtures in residences have been inventoried. All residences now equipped with low flow toilets, taps and showers.	Install low-flow toilets and aerators in Academic buildings. Carry-out inventory of all water fixtures in non-residence buildings. Promote the efficiency of new fixtures to the campus community to help foster a sense of everyone 'doing their part'.	Continue installing most efficient fixtures using available technology.

Motion Detectors Installed	-Motion sensors installed for bathrooms and drinking fountains when new buildings are constructed . -No plan to retrofit existing buildings.	-Bathroom sensors remain; water fountain sensors declared ineffective and removed. Short term goal: -50% of bathrooms with motion detectors Long term goal: -100% of bathrooms with motion detectors.	Some motion sensors in place. Renovations/new construction involves looking at whether sensors will reduce water use or not.	No recommendation.	No recommendation.
Percentage of wastewater treated	100%.	100%.	100%.	No recommendation.	No recommendation.
Storm water contaminant separations/collection	None of Mount Allison's storm water drains connect to contamination separation/collection systems.	No change Short term goal: -Explore feasibility of storm water collection options Long term goal: -Collect at least 50% of storm water.	No change.	No recommendation.	No recommendation.
Projects are undertaken to decrease water usage	Grounds and dining hall have worked hard to reduce water usage (See corresponding chapters).	No change Short term goal: -implement education programs for campus community.	No change. Goal of education programs have not been implemented.	Implement coordinated, campus-wide education.	Consider including in or establishing a fund similar to the GEF for projects that save water and create savings for Mount Allison.
Ground water quality.	The King St. parking lot is being cleaned up from the old foundry.	-King St. remediation is ongoing, taking longer than predicted.	King St. Remediation is still ongoing.	No recommendation.	No recommendation.

Backflow prevention	Backflow prevention was installed in laboratories as renovated; however, there were still many fixtures without backflow prevention.	No change Short term goal: -retrofit at least 50% of campus with backflow prevention Long term goal: -100% retrofit.	Progress is being made. Main piping (sprinkler, main system feeds) have had backflow prevention installed. Backflow prevention installation is ongoing for new and existing fixtures.	No recommendation.	No recommendation.

Transportation

The University will endeavour, under the supervision of Facilities Management to minimize energy consumption and to reduce emissions and the consumption of fossil fuels (MTA Policy 2101)

Introduction

Living in Sackville, it is easy to take for granted the amenities of a rural life: ample parking, little traffic, and higher air quality, as well as the ability to easily walk or bicycle virtually anywhere in town. It can be easy to justify a car ride to school on a cold winter day, or a cab ride home from the grocery store. However, it is important to remember that all of our transportation decisions have an impact on the environment and ultimately influence global warming processes.

Although Mount Allison has a smaller population than many other universities, our collective impact is still significant. Approximately fifty eight percent of the student body comes from outside of New Brunswick, twenty one percent from outside of the Maritimes. Nine percent of our student body is international, travelling to Mount Allison from over 50 countries around the world. Furthermore, students from the University participate in exchanges to over 14 countries, as well as a variety of additional study-abroad programs.

Currently, the University fleet – including academic vehicles – is comprised of 18 vehicles: including trucks, vans, mowers, sweepers and tractors (see Appendix 11.1 for a complete breakdown).

Indicator #1: Bike Racks are available at Academic and Residence Buildings

No new bike racks have been added to academic buildings since the previous audit, as each building on the main campus is already equipped with one. As mentioned in the 2008 Audit, two bike racks have been positioned at the front, and one at the back, of the new Wallace McCain Student Centre.

Windsor Hall, Anchorage, Bigelow and Carriage House are the only residence buildings currently equipped with bike racks. Although students are able to store their bikes in the storage rooms of their residence buildings, these must be unlocked each time by a Residence Assistant. This hassle often deters students from bringing or riding their bicycles.

The Town of Sackville has bike racks situated downtown to facilitate more convenient and secure bike parking. Although bike lanes would encourage bicycling and improve travelling conditions, they have been deemed unfeasible for the town as the roads are not wide enough to accommodate them.

Indicator #2: Emission levels are taken into consideration in the purchase of vehicles

Since 2008, three vehicles have been purchased by the University. This includes a truck for Grounds, a hovercraft for academic research, and a mail vehicle.

For the purchase of the new mail vehicle, the University sought to purchase a vehicle powered by non-carbon fuel sources, as it was determined that this was an ideal opportunity to evaluate the potential use of alternative-fuel vehicles. In fall of 2009, Mount Allison requested information for a vehicle which would meet the department's needs while also being either 100% electric or else a hybrid of electricity, hydrogen, or other source, plus fossil fuel. Purchasing decisions were largely contingent on the carbon footprint of the vehicle, and in the evaluation criteria grid the "Environmental footprint/fuel economy/CO_2 emissions" was given the most weight or 'points' in overall consideration (see Appendix 11.2).

Although staff at Mount Allison have expressed a strong interest in purchasing lower-impact vehicles, the University is restricted from doing so by two factors: (1) provincial legislation and vehicle regulations, resulting in many suppliers of alternative-fuel vehicles being unable to sell within Canada, and (2) the maintenance of performance standards during Sackville's harsh winters. Thus,

many of the vehicles which would have been ideal for use at Mount Allison, such as the Canadian-owned and manufactured electrically-run Might-E truck, are ineligible for purchase in New Brunswick. Mount Allison is further limited because its fleet vehicles must be able to travel on designated provincial roads such as Main Street and York Street and the province currently has no legislation permitting the use of Low Speed Vehicles. This was the primary reason for which an electric vehicle was ultimately not purchased.

In the search for a replacement mail vehicle, the University briefly experimented with the Club Car: a golf-car style, low-emission vehicle. However, its inability to meet performance expectations in a range of weather conditions ultimately rendered it an impractical option for the University. In the end, the University purchased the Ford Transit Connect to replace the mail truck; though not electric, it has decreased fuel consumption substantially compared to the previous vehicle. This model has a similar electric version which is currently not available in Canada; however, when the electric version is made available for purchase, the University plans to trade in the current truck for the electric. It has been stated that the school will likely look at something similar for the replacement of the Plumbing and Carpentry vehicles.

Might-E Trucks

Manufactured by Canadian Electric Vehicles outside of Parksville, BC, the Might-E truck is an electrically powered work vehicle. Features include:

- 1500 lb load capacity
- Travels up to 40 km/hr
- Available as a flat deck, van, base chassis, cab and chassis, or can be customized for specific applications

The Might-E Truck meets Transportation Canada's requirements and regulations for Low Speed Vehicle (LSV) or Neighbourhood Electric Vehicles(NEV) for use as utility, work or urban vehicles and is therefore street-legal where local and provincial bylaws allow.

These trucks are currently used on the University of Victoria, University of British Columbia, Simon Fraser University, and University of Oregon campuses.

Facilities Management has been looking into reducing the number of vehicles in its fleet. Ideally, they would aim to have one larger vehicle able to make trips to Moncton and Amherst, and replace the remaining fleet with solar-powered Gator Utility Vehicles for use on campus. One of these vehicles was piloted on campus in the fall of 2008 and was received positively by FM staff. Although these vehicles are unable to drive along provincial roads, they are permitted to cross roads at right angles, which would provide full access to all parts of campus. The biggest restriction on moving forward with this endeavour is cost, as each of these vehicles costs upwards of $15,000.

Indicator #3: Adherence to, and effectiveness of, vehicle policy

All managers ensure that their vehicles have a daily log book for employees to record fuel purchases and mileage. They also keep files to record any service to the vehicle and log books from previous years.

It is important to note that the current vehicle policy (MTA Policy 7903 – Vehicle Operations) only outlines the use of vehicles that fall under the jurisdiction of Facilities Management. It does not address practices for those that belong to Ancillaries or the Academic Departments.

Anti-idling sign in downtown

Facilities Management has implemented a new policy regarding Vehicle Fuel Conservation and Idling (Appendix 11.3). The new policy outlines a series of actions to conserve fuel and significantly reduce idling time. These include the elimination of unnecessary weight in vehicles, carpooling, proper tire inflation, and gradual versus rapid acceleration. It further outlines new standards for vehicle idling, notably reducing allowed idling time.

Over the year preceding this audit, the Tantramar Planning Commission has been conducting research about idling for the town of Sackville. Over the course of the summer of 2011 the Planning Commission, with the help of a Mount Allison student, will be developing an anti-idling campaign and education program to be implemented in the fall.

Indicator #4: Status of Mount Allison community's commute

Currently, Mount Allison does not have a carpooling website. Although the site was functional for a time, the existing link is broken and the site is therefore no longer in use. Though many campus and community members walk or bicycle to school, this could be a vital tool to allow individuals to easily connect and coordinate their daily commutes. Furthermore, as suggested in previous audits, it could be particularly effective for irregular ride sharing such as at the beginning and end of the academic year, winter holidays, and reading week due to high volumes of students travelling to and from Moncton airport at this time.

Summary

With the increased focus on purchasing lower emission vehicles, Mount Allison has made an important shift towards reducing its carbon footprint and working to become a more sustainable institution. However, the University should not only be changing the types of vehicles it purchases, but it should further encourage behavioural change among all campus and community members. Environmentally-friendly vehicle practices must be encouraged and applied to the entire University campus. Furthermore, the institution should encourage alternative modes of transportation, such as bicycle riding and carpooling whenever possible.

Recommendations

Short Term

- Develop a University-wide Vehicle Policy
- Follow Facilities Management's lead, or adapt the new Facilities Management Policy 1.17, in creating a no-idling policy, or a no-idling clause as part of a campus-wide Vehicle Policy.
    - This should apply to all vehicles driven on campus, and this policy should be made known with adequate signage posted in areas where vehicle access is possible and idling takes place (notably in front of the Chapel, between Avard-Dixon and Barclay/Flemington/President's Cottage, in front of the North Side Residences, in front of the Student Centre, in Front of Convocation Hall, Satellite Residences).
    - This could be developed in consultation with the Tantramar Planning Commission and their research on idling and its prevalence in the Town.
- Ensure Bike racks are available in front of all residence buildings
- Re-establish the Mount Allison Carpooling website. Advertise widely once it is up-and-running, particularly during peak travel times
    - This could be an initiative taken on by the Environmental Issues Committee, and could be implemented with the aid of Computer Science students or the department
- Jointly offer a workshop on bike safety with the Town of Sackville, including by-laws, hand signals and basic bicycle repairs to encourage bike use.
- Keep the campus community informed and updated about vehicle changes and efforts to lessen their use
- Keep the Facilities Management bike in good condition and add a basket for to carry light equipment in order to encourage FM staff to avoid car use for small trips

Long Term

- Create a bike-share, or bike rental, program for the spring, summer and fall months. Look into the feasibility of partnering with the town of Sackville on such an endeavour.

- Continue to replace existing University vehicles with lower-impact vehicles
    - o Evaluate the payback, and begin the transition towards Gator Utility Vehicles (or alternative electric vehicles) to replace the aging, existing Facilities Management fleet.

Indicator	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Recommendation	Long Term Recommendation
Bike racks are available at academic and residence buildings.	There are 14 bike racks located across campus. Plans for additional bike racks as future construction on campus progresses.	2 additional bike racks will be available in front of the New Student Centre.	Bike racks available outside all academic buildings. Only available outside 3 residence buildings and in 2 bike rooms.	Install bike racks in front of all residence buildings to encourage on-campus student bicycle use.	Create a bike rental or bike-share program for the spring, summer and fall months.
Emission levels are taken into consideration in the purchase of vehicles	Emission levels were considered for the only vehicle acquisition since the 2002 audit. Due to heavy work requirements of the vehicle, no hybrid or alternative vehicle was suitable.	Emission levels are more of a concern to some department than others. 2 new vehicles have been acquired including a flexible fuel vehicle.	Emission levels and environmental impact were the primary consideration when purchasing the new mail vehicle, and will remain a priority in future vehicle purchases.	Continue to investigate low-emission vehicles for all future vehicle purchases.	Purchase Gators or similar solar-powered vehicles for the replacement of the Facilities Management fleet. Retain only one vehicle for trips through Sackville, and to Moncton and Amherst.
Vehicle operators adhere to the Vehicle policy	The majority of operating procedures are followed by employees. The few problem areas can be resolved with retraining.	Same.	Same.	Implement a University-wide Vehicle Policy, ensure the inclusion of a no-idling clause.	No Recommendation.

Status of Mt. A Commuter Program	An informal drive board in the Student Centre was used minimally for a brief period of time. While the board still exists it is no longer used.	Mt. A's Carpooling System was launched in 2005.	Mount Allison no longer has a carpool program.	The Environmental Issues Committee, in conjunction with Computing Services or a Computer Science student should redesign and re-launch the Carpooling website, accompanied by sufficient advertising.	No Recommendation.

Emissions

Mount Allison has a strong tradition of innovation and leadership on environmental issues. However, the current state of the climate crisis demands that the University build on this tradition to reduce its carbon footprint. (MTA Policy 2101)

Introduction

The Audit aims to make connections between human actions and their surroundings, both as individuals and as collectives. While there continues to be greenhouse gases and pollutants emitted into the air from human activity, it is certainly arguable that awareness regarding these emissions is increasing. The exact extent of global warming and its effects may not be known; however, it is clear that finding an alternative to excessive greenhouse gas emissions must be done for a healthy planet.

In 2009 Mount Allison University adopted the Emissions Reduction Policy (MTA Policy 2101). Initially spearheaded by students and the Environmental Issues Committee, it specifies efforts to be made to reduce emissions from heat, electricity, and transportation. It also declares performance indicators, such as emissions per square foot, and speaks to establishing baselines and targets by certain dates to measure progress. While Financial Services has been making great strides for the logistics of measuring the institution's carbon footprint, or amount of carbon dioxide emitted into the atmosphere, deadlines set in the policy to "establish interim targets by December 31, 2010, for goals and actions for 2012, 2015..." have not yet become a reality.

This Audit is the first since the adoption of the Emission Reduction Policy. Bearing this in mind, the structure and use of indicators was altered by the auditors in an attempt to best reflect Mount Allison's current situation and position for the future. The aim of such changes was predominantly to acknowledge that greenhouse gas emissions from the institution are problematic both in their existence and in the processes that create them. The table below shows the greenhouse gas emissions in equivalent metric tonnes of CO_2[1] as was reported in the Review of Operations for each year.

Type	09-10 (Metric tons of $CO_{2)}$	10-11 (Metric tons of CO_2)
Bunker A	6,444	1,971
Power	5,021	4,859
Natural Gas	180	3610
Furnace Oil	17	n/a
Propane	19	1
Diesel	n/a	24
Employee Travel	864	856
Team Travel	55	31
Field Trips	207	314
Fleet	52	60
Waste	245	425[2]
Refrigerants	n/a	50

Indicator 1: Emission levels resulting from heat and electricity

In the 2009-2010 fiscal year (May 2009 to April 2010), heat and electricity used for the institution resulted in 11,501 metric tonnes of carbon dioxide emissions. This was similar to the figure provided in

[1] All data was provided by Mount Allison Financial Services. This department is in charge of calculating the University's carbon footprint, and has been using the Clean-Air Cool-Planet Campus Carbon Calculator™ to do this. The Carbon Footprint calculation process is still in the early years and new information from the institution continues to be incorporated yearly for further accuracy (i.e. addition of diesel and refrigerant footprint). For this reason, comparing the total footprint between years should be done carefully since there is variation not only in quantity seen here but also in methodology.

[2] While this many indicate an increasing trend, the large difference between years may also be as a result of a change in the system of transporting and tracking waste from Mount Allison. See Chapter 5-Solid Waste for more information.

the 2008 Audit for 2007-2008[3]. The following year showed a decrease to 6860 metric tonnes. The majority of this difference was reported to be attributed to the conversion of three boilers in the physical plant to natural gas, which has lower CO_2 emissions than Bunker A when used for the same purposes. However, the very low figure for natural gas emissions was noted by the auditors and is currently being reviewed for accuracy by the University. No conclusion was reached at the time that this Audit was published.

Indicator 2: Emission levels resulting from transportation

Transportation emissions included in the institution's calculations amounted to 1,178 metric tonnes of carbon dioxide for the 09-10 fiscal year. The following year showed an increase to 1,261 metric tonnes. No transportation emission amounts were included in the 2008 audit for comparison. While calculating transportation emissions can prove useful for comparing trends over several years, it is important to note that vehicle type, fuel quality, speed, and many other variables will affect the quantity of emissions and cannot be measured with perfect precision.

Indicator 3: Emission levels resulting from solid waste

Emissions resulting from solid waste have been calculated to be the equivalent of 245 metric tonnes of CO_2 for the 09-10 fiscal year and 425 metric tonnes for the 10-11 year. The 2008 audit recorded 98 tonnes for 07-08, a number consistent with previous years. The large disparity between these amounts suggests that there may have been differing methodology used to calculate each of them, and it is not possible to say if there is, in fact, the increasing trend that is suggested by the numbers. The type of waste will also greatly affect the type and quantity of greenhouse gas emissions that are produced. However, these amounts do serve to show that although it is not specifically referred to in the Emissions Reduction Policy, solid waste does contribute to the carbon footprint of Mount Allison.

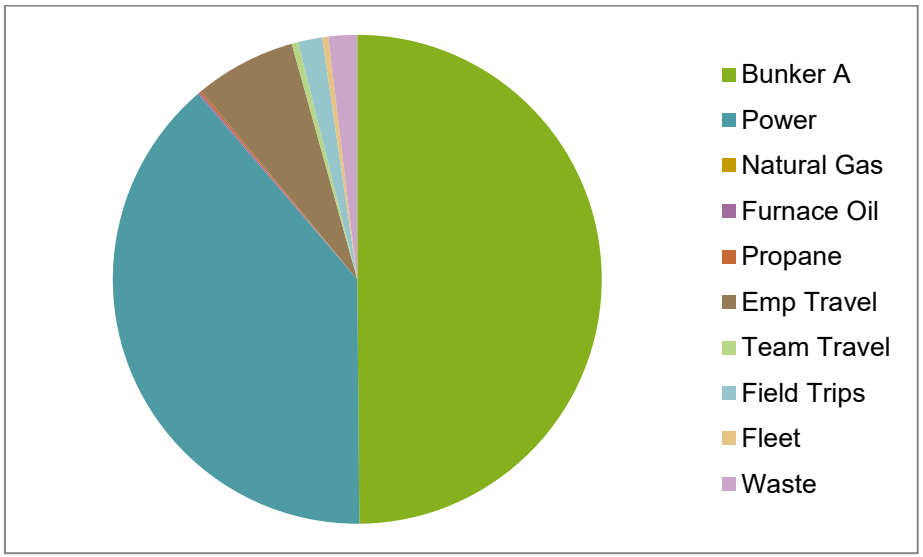


Figure 1: Sources of emissions as a portion of Mount Allison's total carbon footprint for the 2009-2010 fiscal year.[4]

Indicator 4: There is an emission reduction strategy in place that is being adhered to.

This indicator was added to acknowledge that the emission of greenhouse gases does not occur independently from day to day processes and the long term goals of the institution. In 2009, Mount Allison adopted its Emissions Reduction Policy. The policy outlines key areas of attention, all three of which are discussed in Indicators 1 and 2 of this section of the Audit. The policy notes key indicators, mostly related to energy consumption and emissions by the institutions, and states that a baseline and reduction targets are to have been established by the end of December 2010. While Financial Services has been making great strides with their efforts to calculate

[3] The 2005 and 2008 Audits include emission amounts for several indicators as well as a total for Mount Allison. These were done using an earlier version of the Clean-Air Cool-Planet program. For this reason, it is not possible to make conclusions based on trends from prior years, as some figures show greater disparity than likely exists. They are included to acknowledge previous work that was done and for interest's sake; however, they should not be objectively compared to calculations done with the newer program.

[4] Data for chart provided by Mount Allison Financial Services department.

the carbon footprint, a baseline and targets have not been set at the time of the Audit. It was mentioned that there is hesitation due to not wanting to arbitrarily pick these numbers, but rather use a researched methodology. Therefore, the process appears to be halted until a decision is made.

Summary

Since the previous audit, there has been great improvement on the part of the institution in terms of recording and calculating greenhouse gas emissions. Many figures do not appear to be comparable with those in previous audits due to what seems like a lack of consistency in methodology; however, Financial Services appears to be committed to continually improving the process which should make for more solid and reliable data in the coming years. The lack of established targets and baselines violates commitments made in the Emissions Reductions Policy by Mount Allison. This must be adhered to in order for progress to be made, decisions to be understood and successes to be celebrated by the entire campus community as well as externally.

Recommendations

Short Term

- Raise awareness throughout campus community about Mount Allison's energy sources and related emissions, specifically the conversion to natural gas, in order to foster a sense of personal responsibility on the part of the institution and the individual; ensure accuracy of all figures before doing this
- Research and design methodology, then decide on emission reduction targets and baseline; look to other institutions as well as Mount Allison's values for guidance
- Develop a plan for achieving goals and targets; include input from all involved
- Continue developing carbon footprint calculation methods; ensure proper records are being kept of what is and is not included for validity and continuity; this should include ensuring meters for electricity and steam consumption are in working order
- Include emissions from activities on the Mount Allison Farm in carbon footprint (i.e. fertilizers, fuel for machinery used) also consider what could negatively affect the carbon balance of Mount Allison (i.e. trees) and whether this is valid for inclusion in calculations
- Consider involving students and/or other departments in carbon footprint calculations as a learning tool

Long Term

- Work toward achieving emission reduction targets
- Consider long-term commitment to carbon neutrality; look to other institutions doing this for guidance
- Ensure emissions reduction strategy, calculations, and actions are evaluated regularly for best possible practices
- Incorporate commuter travel and/or transportation to/from Sackville for students into transportation emission calculations

Indicator	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Recommendation	Long Term Recommendation
Emissions resulting from heat and electricity	10,942 tonnes of CO_2 from May '04-April '05.	11,844 tonnes of $C0_2$ from May '07-April 08.	11,501 tonnes of CO_2 from May 09-April '10.	Investigate accuracy of natural gas calculations for 10/11 Raise awareness throughout campus community about the effects of increased natural gas use.	Decrease emissions as part of an emissions reduction strategy.
Emissions resulting from transportation	No exact amount provided.	No exact amount provided.	1,178 tonnes CO_2 for the 09-10 fiscal year; 2010-11 was 1,261 tonnes. Calculation process is still being adapted for accuracy.	Continue working with users of campus fleet to ensure information that is pertinent to emissions can best be recorded and used Expand accounting of Mount Allison transportation for business in calculations (i.e. externally funded).	Incorporate commuter travel and/or transportation to/from Sackville for students into transportation emission calculations.
Emissions resulting from solid waste	59 tonnes CO_2 estimated from Oct 2004 to February 2005.	98 tonnes of CO_2 estimated from May 07-April 08.	245 tonnes CO_2 for 09-10 425 tonnes CO_2 for 10-11.	Continue revising calculation process; place primary focus on waste reduction as calculations lack accuracy and should not be the main point.	No recommendation.
There is an emission reduction strategy in place that is adhered to.	No Recommendation.	No Recommendation.	Emissions Reduction Policy adopted in 2009 Baseline and targets outlined have not been established as committed to in policy.	Establish baseline and targets for indicators outlined in the Emissions Reduction Policy Develop plan for implementing strategy and meeting goals with input from entire campus community.	Work towards goals Consider commitment to carbon neutrality Regularly re-evaluate processes, policy, and strategies in order to ensure continued success.

Procurement

The University will endeavour, under the supervision of the Controller to minimize the ecological impact of the products and services purchased in support of campus operations. (MTA Policy 2101)

Introduction

The sustainability of an institution is dependent not only on the practices within the institution itself but also, to a large extent, what products are being brought into it and the companies with which it deals. As the 'gateway' to the institution, the procurement process has a significant impact on determining the sustainability of the institution and the depth of commitment to environmental values.

While making a purchasing decision requires taking into account a wide range of factors, it is important to consider the ethical and environmental impacts of every purchase. There is more to a product or service than what we see in front of us, and it is vital to remember that the decisions of the University have an impact far beyond the confines of the campus.

Indicator 1: In the purchase of products, the following factors are taken into consideration: reduced packaging, environmental performance, reduced consumption, construction and longevity.

The previous audit suggested the creation of an environmental procurement policy. Though an entire policy has not been created, an "Environmentally Aware Procurement" section has been added to the existing procurement policy (MTA Policy 7101) as of September 20, 2010. Notably, this section corresponds to the Procurement indicators laid out in the Environmental Policy. This section calls for the adoption of "environmentally friendly procurement, where environmentally friendly procurement does not conflict with the established principles of good Supply Management." Mount Allison will therefore look for goods and services that:

- Contain post-consumer recycled materials
- Contain materials that lend themselves to recycling
- Contain a minimum of packaging
- Are not harmful to the environment, where less harmful alternatives are available

Although there has been an impact on altering the types of products purchased following this amendment, the Procurement Manager noted that it is difficult to say whether this is solely the result of this change. The business world is changing and businesses are increasingly concerned with the ethics and sustainability of their supply chains. There has been a developing tendency towards, and expectation of, corporate social responsibility – including environmental practices. Thus these alterations to Mount Allison's procurement are likely greatly impacted by changing attitudes and practices in the business world, in combination with the new policy. At the very least, however, this policy change has brought these values and considerations to the forefront, making it clear the types of products and services Mount Allison is looking for.

Cost considerations typically include those not reflected directly in the product price, such as transportation, installation, operation, disposal and maintenance. Furthermore, the University increasingly requires contractors or suppliers to be responsible for packaging removal, or the recycling of products being replaced, particularly in construction proposals. For example, for the replacement of seats in Brunton Auditorium, proposals were required to explain how the old seats would be recycled; the current contractor is deconstructing these old seats and recycling all eligible parts, such as the metal frames.

The environmental impact of a service or product is outlined as one of the twelve criteria by which Requests for Proposal (RFP) and Requests for Information (RFI) are evaluated. For example, in the RFI for a new mail vehicle in fall 2009, the environmental impact was given the greatest weight of all factors under consideration (see Transportation chapter for more information). It appears as though

this might mark the beginning of a trend towards placing greater emphasis than in the past upon the environmental aspects of a product, rather than merely price.

Mount Allison is also exploring opportunities to conduct transactions through eProcurement. Outlined in RFIs and RFPs, this process includes: to identify and promote opportunities for members to acquire goods and services with enhanced value and reduced costs.

- eSourcing – viewing catalogues on-line, Request for Quotation(RFQ) etc.
- eProcurement – use of requisitions from multiple sites, approval of ordered against established agreements, ordering on-line
- ePayment – electronic invoice and funds transfer

Not only is the procurement office looking to purchase more environmentally-friendly products, but they are further concerned with reducing the impact within their own department. The Paper section of this audit outlines the significant paper reduction that has occurred as a result of increased use of Purchasing-Cards rather than required submission of Purchasing Orders.

Support services will make decisions on equipment purchases based on lifetime savings, rather than initial cost. If the product has features which allow for greater efficiency, or decreased energy consumption and therefore greater financial savings, the department will be willing to pay a slightly higher price for a product.

Indicator 2: Information is provided to departments comparing the environmental performance of different products

With the shift towards created 'p-card' use, staff experience increasing control over the products they choose to purchase and use. When purchasing office supplies from the E-Way website, individuals have the option of purchasing EcoEasy products. These products are accompanied by a leaf logo: indicating that the product has been designated as an "EcoEasy product adhering to Environmental Guidelines" or that it "has been manufactured with some recycled material." The E-Way website also has a *Staples Green Guide* which catalogues all the environmentally-friendly products available, from cleaning products to office supplies.

Procurement at Mount Allison

If a staff or faculty member wishes to purchase a product, he or she must submit a Purchasing Order (PO) to the Purchasing Office. The money used to pay for the ordered products is deducted from the department's budget. Purchases under $50 do not require the submission of a PO, nor do purchases made by a staff or faculty member who possess a Purchasing Card (p-card), provided this purchase is less than the card limit.

Many products that are purchased on a regular basis are handled by standing contracts with supply companies. For examples, staff can easily access the Corporate Express website or catalogue to purchase office supplies. Furthermore, whenever possible the Procurement office tries to do "blanket purchases" by department, in order to receive a single large shipment rather than multiple smaller ones. Some products ordered irregularly or in smaller quantities are not covered by standing contracts and are purchased under short-term contract agreements.

Mount Allison is also a member of Interuniversity Services, Inc., a not-for-profit company with nineteen member institutions. ISI acts as a buying group, increasing the economies of scale to allow universities to acquire goods and services "with enhanced value and reduced costs." An example of such a contract is the contact with RICOH for central unit printer and copiers.

The University is required to follow the Province of New Brunswick's *Public Purchasing Act* which requires that purchases of goods above $25,000 and services above $50,000 be publicly advertised. It is further obligated to follow the *Atlantic Procurement Agreement* which requires any construction services greater than $100,000 be publically advertised. This is typically done through a competitive bid process including Requests for Proposals, Requests of Invitations to Tender, Requests for Information, Requests for Quotations and Requests for Pre-Qualification.

Currently, there is no campus-wide information program about green products to encourage alternative purchasing decisions. However, many areas of the school are taking the initiative to slowly change the types of products they purchase and use.

As discussed in the Hazardous Materials section, 99% of the cleaning products used by custodial staff are third-party certified Green (see Hazardous Materials). Furthermore, custodial services has purchased and experimented with water ionizers as an alternative to purchasing chemical cleaners.

The University bookstore continues to sell clothing with bamboo and soy based fibres as part of their "Go Green" clothing line. They have also continued to sell reusable cloth bags printed with the Sustainability Mount A logo. As was emphasized in the 2008 audit, in considering the environmental impact of a product, it is also essential to consider the ethical footprint. Though no formal ethical purchasing policy – or section of the Procurement Policy – exists, the bookstore tries to ensure that all clothing companies meet ethical standards before dealing with them. These companies are required to go through an interview process, and must provide information on where and how a product is produced. The bookstore also works with Campus Stores Canada to monitor these companies.

Summary

Procurement at Mount Allison has undergone positive changes since the previous audit. The new clause of the Procurement Policy, paired with the rise in corporate social and environmental responsibility in the business world, will hopefully bring further changes to the types of products and services utilized at the University. As in many areas of the University, the change in policy is easy in comparison to implementing a change in behaviour. The key now is to ensure that all campus members are adequately educated about the impacts of products they – and the institution – are using, and that they are properly informed of their product options upon purchase. In a university setting, there should be no doubt that education is the key to truly creating change, and without adequate product knowledge there can be no greening of the supply chain.

Recommendations

Short Term

- The purchasing office should communicate to staff and faculty the availability of Green products, and encourage them to make such decisions whenever possible
    - Encourage all employees to look at the *Staples Green Guide* before making purchasing decisions. This is available at: http://www.eway.ca/Eway/Publications/Publication.aspx?Param=tCh7M840gGX5atKgyuazJQ%3d%3d&RFX_Campaign=eaf
- Look to similar institutions for ideas of the types of products they are purchasing, and the types of companies with which they are dealing for ideas on how to further green the supply chain

Long Term

- Screen corporate donors and business partners for their ethical and environmental standards. Include such standards in the University Procurement Policy.
- Work with other members of ISI to negotiate contracts for green products that are purchased in bulk, for example recycled paper.

Indicator	State of Affairs 2005	State of Affairs 2008	State of Affairs 2011	Short Term Goal	Long Term Goal
Environmental factors are taken into consideration in purchasing.	More consideration is given to these factors, mainly as a result of customers and shareholders demanding higher environmental standards and more accountability from suppliers.	When drafting RFPs, environmental specifications are often included and receive a weight of 5-10%. This has been facilitated by an increase in available green products and the knowledge of consultants.	With the new Environmentally Aware Procurement section of the Procurement Policy, environmental factors are considered for all purchasing decisions. Environmental impacts are also considered in RFIs and RFPs.	No Recommendation.	Screen corporate donors and business partners for their ethical and environmental standards. Include such standards in the University Procurement Policy.
Development of an environmental procurement strategy.	No environmental procurement strategy exists at this time.	Same.	Environmentally-Aware Procurement section has been added to the Procurement Policy. These standards are consistent with those suggested in the Environmental Policy.	Look to other institutions of a similar size for the types of environmentally friendly products they are purchasing for ideas on how to further “green the supply chain”.	Expand the Environmentally Aware Procurement section to include considerations about the environmental practices of companies from which products are purchased.
Faculty and staff are environmentally conscious when making purchasing requests.	No efforts have been made to improve the environmental consciousness of faculty and staff.	Same. Some staff and faculty members are choosing to order green products; however, there is little encouragement to do so.	Some departments are independently changing the types of products they choose; however, there exists no campus-wide information program for staff and faculty purchasing.	Encourage staff to purchase ‘Green’ products whenever possible.	No Recommendation.

Conclusion

Many new environmentally focused initiatives have begun at Mount Allison University since the last Audit in 2008. The SAC Green Investment Fund (GIF), the Green Evolving Budget and the new Farm are some of the most exciting. These steps, while seemingly isolated, reflect an important evolution in the culture of our institution towards tackling projects and initiatives with environmental sustainability in mind. While some departments continue to make improvements and sustain their current efforts, Mount Allison is not completely environmentally sustainable. However, small they may seem, individual efforts need to be recognized and communicated to the greater campus community alongside further opportunities and ideas to make change.

The theme of communication presented itself in nearly every part of the auditing process. The bridges between staff, students, and faculty need to be strengthened for Mount Allison to reach its full potential as an environmental steward. By combining the relative permanency and continuity of staff and faculty with the energy and innovation of eager students, much more could be achieved. There is too often an inefficient overlap in efforts where building off of one another would get more done. Furthermore, it was made clear that the majority of the University's focus lies in "getting things done" rather than promoting every accomplishment. While this is by no means a bad thing, it can leave those not directly involved in projects feeling demoralized and with the perception that little is being done. At an institution dedicated to learning and fostering leadership, the value of leading by example needs to be better embraced for the benefit of the entire campus community.

Although this Audit can make recommendations for action, the reality of implementation is very different. Mount Allison stands in a strong financial position. This positive financial position should be sustained to ensure the University's longevity; however, committing to environmentally focused projects demands that Mount Allison think of itself as a long-term institution. Budgeting on a year-by-year basis can fail to account for the long term benefits of investing in environmental sustainability. There needs to be widespread support and conviction from senior administration and various boards and committees to agree to spend money on projects that do not have an immediate payback. True sustainability requires the recognition of all costs and impacts – particularly the environmental effects – not merely the price tag on the product.

In the past, implementation has often fallen to senior administration, student groups, Administrative Services, and Facilities Management. If Mount Allison is going to maintain progress in the area of environmental sustainability, every department and every campus community member needs to become stewards of the environment. Opening the lines of communication will help everyone. The environment will never become a value embedded in the culture of the University if efforts are not made to demonstrate the institutional commitments.

As mentioned in the introduction, the Audit is not meant to be viewed as a final report but rather a tool for the future. With current and looming impacts of climate change and environmental degradation action needs to be taken quickly. The University's greatest strength lays in its ability to foster awareness and leadership. As a small institution with a strong history and reputation for environmental commitment, Mount Allison has the potential to emerge as a true leader.

For more information please refer to the 2011 Action Plan that details what we consider to be the twelve most attention-worthy recommendations. This can be found in this Audit and posted on the Environment MTA homepage at http://www.mta.ca/environment/.

Sustainability Action Plan

"Do or do not, there is no try" – Yoda

The 2011 Environmental Audit is the result of many hours, questions, and conversations with dedicated people throughout the Mount Allison community. The Audit in its entirety contains a wealth of information and recommendations from that is written to be used as a tool for working towards being environmentally sustainable. This Sustainability Action Plan (SAP) presents the recommendations that the auditors felt were realistically the most important when it comes to the institution's role not only as an establishment of higher education, but as a place that plans for a healthier tomorrow.

The top 12 recommendations:

- Update the Environmental Policy to reflect present day issues and needs.
- Re-establish a vision and update the mandate and membership for the Environmental Issues Committee.
- Establish University wide Paper, Grounds and Vehicle policies.
- Determine targets to fulfill the requirements of the Emissions Reduction Policy.
- Expand the Carbon Footprint Calculations to include student travel, undocumented faculty travel, farm activities and carbon absorption.
- Clarify the Farm's mission/mandate.
- Install educational panels to inform campus community members of sustainable building techniques and materials.
- Install rainwater collection in all new buildings and where renovations allow.
- Establish an Energy Plan to help guide the Green Evolving Fund projects as well as a strategy to ensure accurate data collection.
- Involve all stakeholders in a campus-wide Wet/Dry educational campaign. Re-implement education during frosh week activities.
- Introduce the Green Pledge Alliance to Mount Allison prospective graduates as a way of asserting student commitment to the environment.
- Efforts must be made by individuals and the University as a whole to communicate environmental initiatives internally and externally. Consider the benefits an Environmental Coordinator would bring to improving communication and the perpetuation of environmental initiatives.

Sources

Clip art for each Audit Chapter courtesy of Google Images

Title Page

Image of Cuthbertson and Environmental Studies class courtesy of the Mount Allison website
Image of Heidi Goodine and Avery Wheeler at the University farm courtesy of the Sackville Tribune Post website

1. Stewardship

Persons Interviewed

Ron Byrne, VP Student and International Affairs, July 5, 2011.
Dr. Robert Campbell, University President, June 2, 2011 and July 26, 2011.
Dr. Michael Fox, Geography and Environment Department Head, June 3, 2011.
Erik Fraser, VP Academic; 2010-2011 Chair of SAC Environmental Affairs Committee
Tony Frost, Director of Marketing and Communication, July 13, 2011.
Robert Inglis, University Controller, June 13, 2011.
Gloria Jollymore, VP External Relations, June 16, 2011.
Rob MacCormack, Director of Facilities Management, ongoing communication.
Toni Roberts, June 8, 2011.
David Stewart, VP Administration, June 6, 2011.
Michelle Strain, Director of Administrative Services, June 24, 2011.
Dr. Brad Walters, Environmental Studies Professor, June 1, 2011.

Works Cited

Keniry, J. (1995). *Ecodemia: Campus environmental stewardship at the turn of the 21st century*. Washington, D.C., USA: National Wildlife Federation.
M'Gonigle, M. & Starke, J. (2006). *Planet U: Sustaining the world, reinventing the University.* Gabriola Island, BC, Canada: New Society Publishers.
University Leaders for a Sustainable Future. (2008). *Programs {Talloires Declaration}*. Retrieved July 21, 2011, from http://www.ulsf.org/programs_talloires.html

Images

Eco-logic logo from former Environment Mount Allison website
350 Day event photograph courtesy of Eco-Action

2. Curriculum

Persons Interviewed

Dr. Berkley Flemming, Interim Vice President Academic and Research, July 19, 2011
Dr. Michael Fox, Head of the Department of Geography and Environment, June 3, 2011
Dr. Jeff Ollerhead, Dean of Science and Graduate Studies, July 5, 2011
Survey Monkey, Department Head Survey - Environmental Audit '11, May 31, 2011 – August 12, 2011
Dr. Hans vanderLeest, Dean of Arts, June 14, 2011
Dr. Brad Walters, Environmental Studies Co-ordinator, June 1, 2011

Works Cited

Department of Geography & Environment Self-Study Document, March 28-29, 2011
Development of an Integrated Community Sustainability Planning Program, Dr. M. Fox, February 25, 2011
Mount Allison University Academic Calendar 2011-2012
United Nations University, Institute of Advanced Study, Regional Centre of Expertise (RCE), Retrieved on May 26, 2011 from http://www.ias.unu.edu/sub_page.aspx?catID=108&ddlID=

3. Paper

Persons Interviewed

Judy Van Rooyen, Supply Services Manager, June 21, 2011.
Bart Musgrave, Procurement Manager, July 6, 2011.

Works Cited

University of Prince Edward Island. *Environmentally Friendly Paper Policy.* Sustainability and Energy Management Office. Web. Accessed June 29, 2011. http://sustainability.upei.ca/environmentally-friendly-paper-policy

Images

Sustainable Forestry Initiative logo from Google Images

4. Food

Persons Interviewed

Andrea Ward, Grounds Manager, June 7, 2011.
Brian Slemming, Director of Dining Services, June 22, 2011
Michelle Strain, Director of Administrative Services, Jun 24, 2011
Avery Wheeler and Heidi Goodine, Mount Allison Farm employees, July 7, 2011
Beth McMahon, ACORN Executive Director, email correspondence.

Works Cited

Sea Choice, retrieved on July 18, 2011 from http://seachoice.org/

Images

Farm photographs taken by Auditors

5. Solid Waste

Persons Interviewed

Donna Hurley, Custodial and Operations Manager, May 30, 2011.
Gena Alderson, Westmorland Albert Solid Waste Corporation Tour, May 31, 2011.
Andrea Ward, Grounds Manager, June 7, 2011.
Alan O'Brien, Custodial Supervisor-Residence Buildings, June 9, 2011.
Paul Shannon, Custodial Supervisor-Academic Buildings, June 9, 2011.
Michelle Strain, Director of Administrative Services, June 24, 2011
Rob MacCormack, Director of Facilities Management, ongoing communication.

Works Cited

Westmorland Albert Solid Waste Corporation Website; Accessed May 2011-July 2011; various pages. http://www.westmorlandalbert.com/
Waste quantity and type data provided by Facilities Management.

6. Hazardous Materials

Persons Interviewed

Phil Cormier, Laboratory & Stores Supervisor, Safety Officer, August 5, 2011
Dan Durant, Technical Assistant and NMR Manager, June 7, 2011
Dr. Khashayar Ghandi , Assistant Chemistry Professor, June 11, 2011 via e-mail correspondence
Thaddeus Holownia, Fine Arts Department Head, July 6, 2011
Donna Hurley, Custodial and Operations Manager, May 30, 2011
Alan O'Brien and Paul Shannon, Custodial Supervisors, June 9, 2011
Dr. Jeff Ollerhead, Dean of Science and Graduate Studies, July 5, 2011
John Peters, Pool Manager / Head Coach /Swimming /Cross Country, June 28, 2011
Dan Steeves, Printmaking Technician, June 10, 2011
Andrea Ward, Grounds Superintendent, June 7, 2011

Works Cited

Avmor, Retrieved on June 3, 2011 from http://www.avmorgreen.com/English/green.php
Hazardous Waste Management: Canadian Directions. Retrieved on July 4, 2011 from http://dsp-psd.pwgsc.gc.ca/Collection-R/LoPBdP/BP/bp323-e.htm

National Micro-scale Chemistry Centre retrieved on July 11, 2011 from http://www.microscale.org/about.asp

Images

Chlorine containers photograph taken by Auditors

7. Grounds Keeping

Persons Interviewed

Andrea Ward, Grounds Superintendent, June 7, 2011

Works Cited

Mount Allison University, Environmental Audit 2008
Road Salts, Case Study #7, Utilizing Technological Advances in the Management of Road Salt Usage in Nova Scotia
http://www.ec.gc.ca/nopp/roadsalt/cStudies/en/ns.cfm
Road Salts and Deicers, Green Venture, retrieved on July 12, 2011 from http://water.greenventure.ca/road-salts-deicers
Town of Sackville, By-law No.201.
Water Quality, Road Salt and Winter Maintenance for British Columbia Municipalities, Best Management Practices to Protect Water Quality
http://www.env.gov.bc.ca/wat/wq/bmps/roadsalt.html
Government of Alberta: Agriculture and Rural Development (2010). What's Happening in the Windrow? Retrieved on July 25, 2011 from
http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/eng4467

Images

Image of spraying taken from previous audit

8. New Buildings and Renovations

Persons Interviewed

Ron Eickholt, Projects Manager, July 15, 2011, e-mail correspondence
Alix Mann, Facilities Requirements Manager, June 21, 2011
Rob MacCormack, Director of Facilities Management, ongoing

Works Cited

Forbo Flooring Systems, retrieved on July 22, 2011 from http://www.forbo-flooring.com/Home/Creating-better-environments/
Zeilder, retrieved on May 19, 2011 from http://www.zeidlerpartnership.com/

9. Energy

Persons Interviewed

Perry Eldridge, Technical Services Manager, ongoing May 2011-August 2011.

George Irving, Siemens Canada Limited, June 6, 2011.
Gloria Jollymore, Vice-President University Advancement, June 16, 2011
Robert Inglis, Controller-Financial Services, June 13, 2011; ongoing email correspondence.
Katie Friars and Eric Tusz-King, EOS Eco-Energy, August 2, 2011.
Rob MacCormack, Director of Facilities Management, ongoing communication.

Works cited

"Fossil fuel energy consumption by country" The World Bank. 2011. Accessed July 15, 2011.
http://data.worldbank.org/indicator/EG.USE.COMM.FO.ZS/countries
New Brunswick Power; Accessed July 2011; various pages. http://www.nbpower.com
"CANADA: Permitting delays at Aulac wind farm in New Brunswick" Wind Power Intelligence. Mar 24 2011
http://www.windpowerintelligence.com/article/UwQNR7J9QNo/2011/03/24/canada_permitting_delays_at_aulac_wind_farm_in_new_brunswick/
Mount Allison data provided by Financial Services.

Images

Photograph of physical plant taken by Auditors

10. Water

Persons Interviewed

George Woodburn, Town of Sackville Engineer, June 23, 2011.
Perry Eldridge, Technical Services Manager, ongoing May-August 2011.
Rob MacCormack, Director of Facilities Management, ongoing communication.

Works cited

Water consumption data provided by Financial Services.

Images

Photograph of sewage lagoon taken by auditors
Photograph of water treatment plant taken by auditors

11. Transportation

Persons Interviewed

Perry Eldridge, Technical Services Manager, email correspondence.
Donna Hurley, Custodial Manger, email correspondence.
Robert Inglis, University Controller, June 13, 2011.
Judith VanRooyen, Supply Services Manager, June 21, 2011.
Andrea Ward, Grounds Manager, June 7, 2011.

Works cited

Might-E Truck Jr. (2011). Canadian Electric Vehicles Ltd., Web. Accessed June 13, 2011. http://www.canev.com/Commercial/CEV/MightTruck/Junior.html
Mount Allison University. (2011). *Facilities Management Policy 1.17 Vehicle Fuel Conservation & Idling.*
Mount Allison University. (1998). *Policy 7903: Vehicle Operations Policy.*

Images

Photograph of Halifax anti-idling sign taken by Auditors

12. Emissions

Persons Interviewed

Perry Eldridge, Technical Services Manager, ongoing May 2011-August 2011.
George Irving, Siemens Canada Limited, June 6, 2011.
Robert Inglis, Controller-Financial Services, June 13, 2011; ongoing email correspondence.
Rob MacCormack, Director of Facilities Management, ongoing communication.
Carolyn Richards, Accounts Payable Technician-Financial Services, August 5, 2011.
Michelle Billard, Financial Services Intern, August 5, 2011.

13. Procurement

Persons Interviewed

Bart Musgrave, Procurement Manager, July 6, 2011.
Judy Van Rooyen, Supply Services Manager, June 21, 2011.

Works cited

Interuniversity Services Inc. (2008). *Home – Interuniversity Services.* Retrieved July 21, 2011, from http://www.interuniversity.ns.ca
Lyons, K. (2000). *Buying for the future: Contract management and the environmental challenge*. London, UK: Pluto Press.
Mount Allison University. (2010). *Policy 2101: Procurement Policy.*

Appendices

Appendix 1.1: The Talloires Declaration

Appendix 1.2: Association of Atlantic Universities President's Statement on Climate Change

Appendix 2.1: Courses with Environmental Content

Appendix 2.2: Local and Regional Resources

Appendix 4.1: Canada Seafood Guide

Appendix 5.1: Basic Waste Flow

Appendix 5.2: Westmorland-Albert Wet/Dry

Appendix 5.3 Westmorland-Albert Solid Waste Corporation Bale-End Products

Appendix 5.4: Waste type by weight for 2009/10 from Mount Allison

Appendix 6.1: Facilities Management Safety Policy

Appendix 7.1: Mount Allison's Integrated Pest Management (IPM) Procedure*

Appendix 11.1: University Fleet

Appendix 11.2 : Criteria for Consideration in the Purchase of New Mail Vehicle

Appendix 11.3: FM Policy 1.17 Vehicle Fuel Conservation & Idling Policy

Appendix 1.1 - The Talloires Declaration

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

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

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

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

We, therefore, agree to take the following actions:

1. Increase Awareness of Environmentally Sustainable Development

Use every opportunity to raise public, government, industry, foundation, and university awareness by openly addressing the urgent need to move toward an environmentally sustainable future.

2. Create an Institutional Culture of Sustainability

Encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward global sustainability.

3. Educate for Environmentally Responsible Citizenship

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

4. Foster Environmental Literacy For All

Create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional students.

5. Practice Institutional Ecology

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

6. Involve All Stakeholders

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

7. Collaborate for Interdisciplinary Approaches

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

8. Enhance Capacity of Primary and Secondary Schools

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

9. Broaden Service and Outreach Nationally and Internationally
Work with national and international organizations to promote a worldwide university effort toward a sustainable future.
10. Maintain the Movement
Establish a Secretariat and a steering committee to continue this momentum, and to inform and support each other's efforts in carrying out this declaration.

Appendix 1.2: Association of Atlantic Universities President's Statement on Climate Change

Our university communities are deeply concerned about environmental challenges such as climate change that have far-reaching economic, social and ecological implications.

Society's knowledge of issues like climate change has been enhanced by research and teaching about these environmental issues on our campuses.

While our university communities have used this knowledge to initiate actions and policies to make our own campuses environments more sustainable, we believe that these efforts can be extended within our institutions and within the broader community.

Therefore, our university communities are committed to providing and maintaining leadership on environmental matters, by:

- Maintaining and extending research and teaching on environmental matters
- Sharing environmental research knowledge and insights with interested parties
- Encouraging public debate on environmental issues on our campuses and beyond
- Working with governments, business, other universities, and policy-makers to develop appropriate environmental solutions and policies
- Developing policies and programs on our campuses to reduce our own carbon footprint and to maintain and extend appropriate sustainability initiatives

With respect to our campuses, our own university communities are committed to:

- Establishing attainable, practical and transparent institutional inventories, plans and processes so that we can understand and reduce our energy consumption and environmental footprint
- Reporting regularly to our communities on the progress of these plans and processes
- Making best use of science and research in these initiatives
- Using quantifiable, measurable criteria to assess the impact of these initiatives
- Publicizing widely the particular initiatives and actions taken to reduce our carbon footprint

These initiatives will include but are not limited to:

- Renovating existing facilities to improve energy efficiency
- Building new facilities to sustainable principles
- Recycling in all aspects of our operations
- Purchasing local products and services where appropriate
- Maintaining and extending green space on our campuses where possible

Appendix 2.1: Courses with Environmental Content

Courses with Environmental Content			
Arts and Letters	Humanities	Social Sciences	Science
FINA 3401	HIST 3401, PHIL 3721, RELG 2411, RELG 3981	ANTH 2501, ANTH 4721, COMM 3371, COMM 3381, ECON 3601, ECON 3801, ECON 3821, GENV 1201, GENV 2001, GENV 2101, GENV 3101, GENV 3201, GENV 3211, GENV 3511, GENV 3701, GENV 4101, GENV 4111, GENV 4201, GENV 4211, INLR 3401, POLS 2301	BIOL 1001, BIOL 1201, BIOL 2301, BIOL 3021, BIOL 3111, BIOL 3201, BIOL 3301, BIOL 3351, BIOL 3361, BIOL 3421, BIOL 3751, BIOL 4111, BIOL 4201, BIOL 4221, BIOL 4371,CHEM 1501, CHEM 2511, CHEM 4521, GENS 1401, GENS 2411, GENS 2421, GENS 3401, GENS 3421, GENS 3451, GENS 4421, MATH 1131

Note: this list was created by searching the word “environment” in the electronic version of the 2011-2012 Academic Calendar, then by reading the course description to determine if the use of the word “environment” fit how this audit defines the word. It is possible that not all courses with substantial environmental content are listed here.

Appendix 2.2 Local and Regional Resources

The Nature Conservancy of Canada
Ducks Unlimited
Bird Studies Canada
The Canadian Association of Geographers
The American Association of Geographers
The Canadian Planners Institute
Renaissance Sackville
Tantramar District Planning Commission
Cape Jourimain Nature Centre
Canadian Regional Science Association
Breaking the Silence Network
The International Town and Gown Association
Huntsman Marine Science Centre
The Coastal Wetlands Institute
and many more...

Appendix 4.1: Canada Seafood Guide

Best Choice

WILD:
Clam: Razor **hand-dug (Can Atl)**, Softshell **(US Atl)**
Cod: Pacific **longline, jig, trap (AK)** †
Crab: Dungeness **(Can/US Pac)**
Lobster: Spiny **(US)**
Mackerel: King, Spanish **(US Atl, US Gulf of Mex)** ◇
Mahi Mahi/Dolphinfish **troll/pole (US Atl)**
Pollock: Alaska **(AK)**
Sablefish **trap, longline (Can Pac, AK†)** ♥
Sardine/Herring: Pacific **(Can/US Pac)** ♥
Shrimp/Prawn: Spot **(Can Pac)**, Pink **(OR†)**
Shrimp/Prawn: Northern **trap (Can Atl)**
Squid: Longfin **(US Atl)**
Swordfish **harpoon, handline (Can, US)** ◇
Tuna: Albacore **troll/pole (Can/US† Pac)** ♥
Tuna: Skipjack **troll/pole, handline (ww)**
Tuna: Yellowfin **troll/pole (US Atl)**

FARMED:
Arctic char **(Can, US, Norway, Iceland)** ♥
Catfish **(US)**
Clams, scallops, oysters ♥, mussels
Tilapia **(US)**
Trout: Rainbow **(US), land-based (Can)** ♥

Some Concerns

WILD:
Clam: Softshell, Quahog, Bar **hand dug (Can Atl)**
Cod: Pacific **trawl (Can/US Pac, AK)**
Crab: Rock **(Can Atl)**, Snow **(Can Atl, AK)**
Crab: Blue **(US Atl)** ◇, King **(AK)**
Haddock **longline (Can/US Atl), sep trawl (Can Atl)**
Halibut: Pacific, Atlantic **longline (Can/Pac Atl)**
Herring: Atlantic **(Can/US Atl)**
Lingcod **(Can, US)** ◇
Lobster: American **(Can Atl)**
Salmon: Pacific, all species **(Can Pac)*** ♥
Shrimp: Northern **trawl (Can†/US Atl)**
Shrimp: Pink **trawl (US Gulf of Mex, US S Atl)**
Sole: Pacific **(Can/US Pac)**
Squid: all species **(ww ex Longfin US Atl)**
Tuna: Bigeye, Yellowfin **troll/pole (ww ex US Atl), longline (US Atl)** ◇, **handline (HI)**
Tuna: Albacore ◇, Skipjack **longline (HI)**

FARMED:
Pangasius, Basa, Swai **(Intl)**
Shrimp/Prawn: White **(US)**
Trout: Rainbow **open-cage (Can)** ♥
Tilapia **(Central/S Am)**

Avoid

WILD:
Chilean seabass/Patagonian toothfish **(ww)** † ◇
Clams: Arctic surf, Quahog **dredge (Can Atl)**
Cod: Atlantic **(Can/US Atl)**
Crab: King **(Intl ex US)**, Jonah **(Can Atl)**
Flounder/Sole: **trawl (US Atl)**
Greenland halibut/Turbot **(Can Atl)**
Haddock **trawl (Can/US Atl)**
Halibut: Atlantic **trawl (US Atl)**
Lobster: Spiny **(Brazil)**
Orange roughy **(ww)** ◇
Rockfish: all species** **trawl (Can, US)** ◇
Scallops: Sea **dredge (Can Atl)**
Shark: all species **(ww)** ◇
Shrimp/Prawn **(Intl ex US)**
Swordfish **longline (Can Atl, Intl ex US)** ◇
Tuna: Albacore **longline (ww ex HI)** ◇
Tuna: Bluefin **(ww)** ◇
Tuna: Yellowfin, Bigeye **longline (ww ex US Atl)** ◇

FARMED:
Shrimp/Prawn: Tiger, White **(Intl ex US)**
Salmon: Atlantic **(ww)** ◇
Tilapia **(China, Taiwan)**

Alert Codes

Green = Best Choice. Best Choice items are well managed, abundant, and caught or farmed in environmentally sustainable ways.

Yellow = Some Concerns. Some Concerns seafood should be consumed infrequently, or when a green choice is not available. There are concerns with abundance, management, or impacts on habitat or other marine life.

Red = Avoid. Avoid seafood items from this list for now. They come from farmed or wild sources with a combination of critical problems—habitat damage, lethal impacts on other species, critically low populations, or poor management.

◇ Limiting consumption of these items is recommended due to elevated mercury or PCB levels. Children and women of childbearing age should take the strongest precautions. Learn more at ww.edf.org/seafoodhealth.

♥ Indicates seafood high in omega-3 fats and low in contaminants.

† Some or all of this fishery is certified as sustainable by the Marine Stewardship Council. Visit www.msc.org, and www.seachoice.org for more information.

* Check seasonal recommendations for wild BC salmon at www.seachoice.org ** Various species of rockfish are often sold as snapper. Version: 07/2009

Abbreviations: Can=Canada, US= United States, Mex= Mexico, S Am=South America, Intl=International, Atl=Atlantic, Pac=Pacific, AK=Alaska, HI=Hawaii, OR=Oregon, WA=Washington, CA=California, ww=worldwide, ex=except, sep=separator

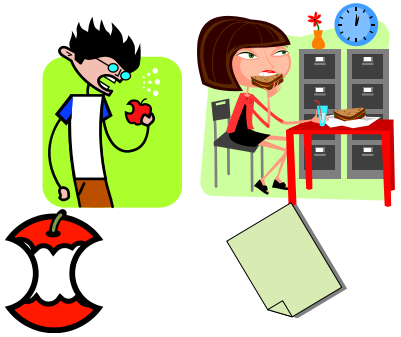
Source: Seachoice.org

Appendix 5.1: Basic Waste Flow

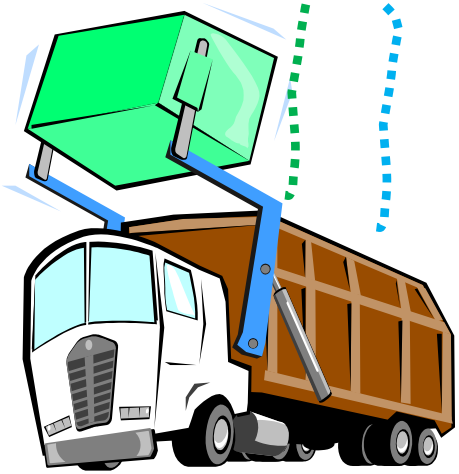
So, this is how it goes…

- People throw things out. Ideally in the proper Wet or Dry compartment
- A custodian then empties the bins and takes bags to the garbage room or bin
- Grounds staff come and take the bags by truck to the central dumpster area
- An external contractor empties the dumpsters and transports waste to the WASWC facility in Moncton where it is weighed, sorted, and sent off for recycling or is added to the landfill on-site

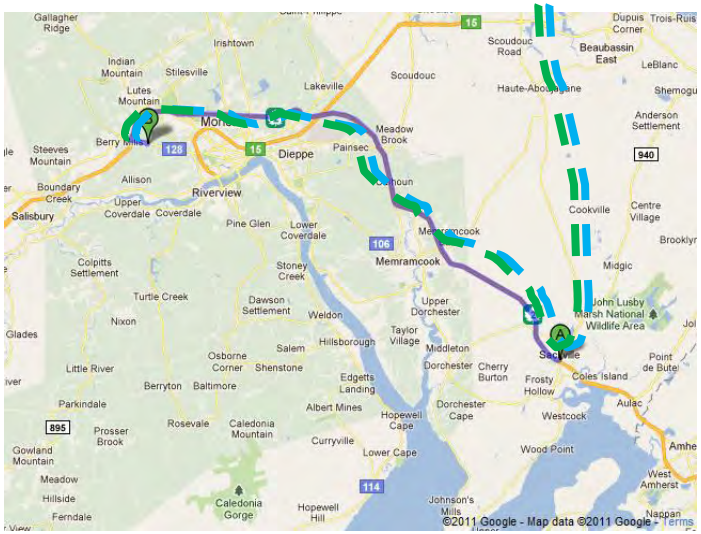
Grounds



Custodial



Grounds



Appendix 5.2: Westmorland-Albert Wet/Dry

[1]

[1] Appendix 5.2: Wet/Dry Sorting chart; Source: http://www.westmorlandalbert.com/

DRY

DRY waste must be placed in a **BLUE** transparent bag.
Please shake, wipe or rinse Dry waste clean to ensure it can be recycled.

Cloth
- Clothes
- Curtains
- Fabrics
- Footwear
- Gloves, scarves, hats
- Leather
- Linens, sheets
- Nylons
- Rags
- String
- Towels
- Wool

Glass
- Bottles
- Containers
- Cups
- Dishware
- Mirrors
- Pyrex

Metals
- Aluminum - cans, plates, foil, pouches (clean)
- Containers
- Cups
- Cutlery
- Jewellery
- Paper clips
- Pots and pans
- Scouring pads
- Staples
- Tools
- Wire

Paper
- Bags
- Books, reports
- Boxboard
- Boxes (all types)
- Bristol board
- Calendars (spiral removed)
- Cardboard
- Cards, index cards
- Envelopes
- File folders
- Flyers, posters
- Microwave popcorn bags
- Milk cartons (rinsed)
- Newsprint
- Paper towel rolls
- Pizza boxes (dry)
- Telephone directories
- Wrapping paper

Plastics
- Bags
- Bottles
- Bubble packaging
- Containers (all types)
- Cups
- Meat wrappers (rinsed)
- Medicine bottles (empty, rinsed)
- Milk bags, jugs (rinsed)
- Negatives
- Packaging
- Transparencies
- Toys
- Wrappers

Other Items
- Aerosol cans (empty)
- Balloons
- Binders
- Blinds
- Board games
- Brushes, combs
- Calculators
- Carbon paper
- Ceramics, pottery
- Chalk
- China
- Coffee packaging
- Containers (all types)
- Computer equipment
- Cookie, chip bags
- Coolers
- Cork
- Cosmetics
- Drink boxes
- Elastic bands
- Electronic parts, games
- Fast food wrappers
- Frozen juice containers
- Hardware
- Lawn chairs
- Lids, covers (all types)
- Light bulbs
- Meat trays (rinsed)
- Paint brushes (dry)
- Paint cans (empty, remove lids)
- Pencils, pens
- Picture frames
- Razors (disposable)
- Rubber, latex gloves
- Sandpaper
- Sponges
- Sports equipment
- Stickers
- Styrofoam
- Twist ties
- Utensils

HHW

Do not place Household Hazardous Waste in your Wet or Dry Waste. HHW must be brought to our on-site depot or to our mobile unit (Spring, Fall).

- Aerosol cans (with contents)
- Adhesives
- Antifreeze/coolants
- Batteries (household, car)
- Bleach
- Butane cartridges
- Chemicals
- Cleaning products (home, car)
- Cleaner (oven, metal)
- Ethanol/methanol
- Fertilizers
- Flea powder
- Fluorescent light bulbs
- Gasoline, diesel fuel
- Glue/contact cement
- Herbicides/fungicides
- Insecticides/pesticides
- Kerosene
- Lighters (with contents)
- Medication
- Mercury (thermometers)
- Motor oils/filters
- Nail polish/remover
- Paint, paint thinner
- Polish (metal, floor)
- Pool chemicals
- Propane tanks/cylinders
- Razors (straight blades)
- Rubbing alcohol
- Rust remover
- Sealants
- Solvents
- Stains, varnishes

* Most empty HHW containers can be placed in the Dry waste.
* Hypodermic needles and lancets must be placed in a sharps container and brought to the HHW depot or to a local pharmacy

HHW DEPOT HOURS:
Friday 10 am - 3pm
Saturday 9 am - 1pm

WET/DRY Information Hotline: 877-1040
www.westmorlandalbert.com

Appendix 5.3

Westmorland-Albert Solid Waste Corporation
Bale-End Products

The following is a list of some of the products that are diverted from the landfill at WASWC. These products can be recycled into a variety of different materials, although the following information is what actually happens to the recyclables diverted from our landfill. When the bales of recyclables are shipped to market from WASWC, they are recycled into the following:

Mixed Paper

Shipped to Quebec, the US or overseas. At the mill, it is mixed with cardboard in a pulper. After a series of rollers and dryers, a smooth linerboard is produced. This linerboard is the smooth layers of corrugated cardboard.

Cardboard, Boxboard, Disposable Coffee Cups

Example: cereal boxes, Tim Hortons' coffee cups, etc.

Shipped to Saint John, NB or Minas Basin, NB. At the mill, it is mixed with mixed paper in a pulper. After a series of rollers and dryers, a smooth linerboard is produced. This linerboard is the smooth layers in a corrugated cardboard box.

Stretch Film (generally #4 plastics)

Example: Plastic wrap, plastic packaging, saran wrap, etc.

Shipped overseas to China. At the plant in China, the film is melted, reprocessed, and put into plant pot moulds. These plant pots are shipped back to North America to be purchased in our stores.

Filler Plastic (grocery bags)

Example: Blue transparent bags, Sobey's bags, etc.

Shipped to the US or overseas to China. At the plant in the US, it is melted down and added to different types of wood fibers to make plastic lumber. Also in the US, it is used to make the following products:

- Laminate flooring
- Speed bumps
- Plastic parking lot blocks
- Cushion between guardrails and posts
- Buoys
- Wheel chocks

At the plant in China, the film is melted, reprocessed and put into plant pot moulds. These plant pots are shipped back to North America to be purchased in our stores.

Newsprint

Shipped to Hantsport, NS. The newsprint is turned into a pulp and placed in moulds. These moulds consist of fast-food drink trays, produce trays, and egg cartons. These products can be found in our local stores and can be sent to be recycled with the newsprint time and time again.

HDPE #2 Colour, Natural, and #1 PETE Plastics

Example: Laundry detergent bottles, bleach bottles, water bottles, etc.

Shipped to Quebec or the US. At the plants, they are washed and pelletized. These pellets are then sold to manufacturers who will melt the pellets and use moulds to produce the same products once again. For example, Tide bottles, Javex bottles, shampoo bottles, and windshield wash containers.

More specifically:

- HDPE #2 Colour = new oil bottles, drain pipes, and lumber
- HDPS #2 Natural = new windshield wash containers and plastic bottles
- PETE #1 = new pop bottles, egg crates and food-grade PETE

#3 to #7 Plastics

Example: "Other Plastics", some pen/marker casings,

Manufactured into piping, plastic lumber, clothes hangers, black master batch dye, etc.

#6 Plastics

Example: Tim Hortons' brown cup covers, CD cases, etc.

Manufactured into plastic model toys, plastic containers and thermo-insulators.

EPS (Expanded Polystyrene or Styrofoam)

Example: Supermarket meat trays, Styrofoam packaging, etc.

Processed on site through a cold-pack densifying machine (to compact Styrofoam and add weight for shipping) and then placed on pallets in blocks. Once a full sea container load is reached, it is shipped to China where it is manufactured into crown mouldings.

Milk Cartons

Example: Milk cartons, juice cartons, soy milk cartons, etc.

Shipped overseas. At the mill, the milk cartons undergo a process that removes all traces of wax from the outside and inside of the containers. This process then leaves the mill with a high quality paper product, which is recycled into a very expensive writing paper.

Aluminum

Example: Pop cans

Sterilized, melted and moulded. Recycled to produce new aluminum products.

Metals

Example: Tin cans, tinfoil, etc.

Sterilized, melted and moulded to produce new metal products.

Sneakers & Other Shoes

Shipped to Nike in Memphis, Tennessee where they are ground into “Nike Grind” and used to make new sports surfaces, playground surfaces, etc.

Electronics

Example: Computers, printers, fax machines, stereos, etc.

Shipped to Ontario where they are placed in a grinder. The materials are then sent through a variety of material separators, which remove copper, lead, plastic, etc. These materials are then sent to a smelter and other recycling facilities.

Cell Phones

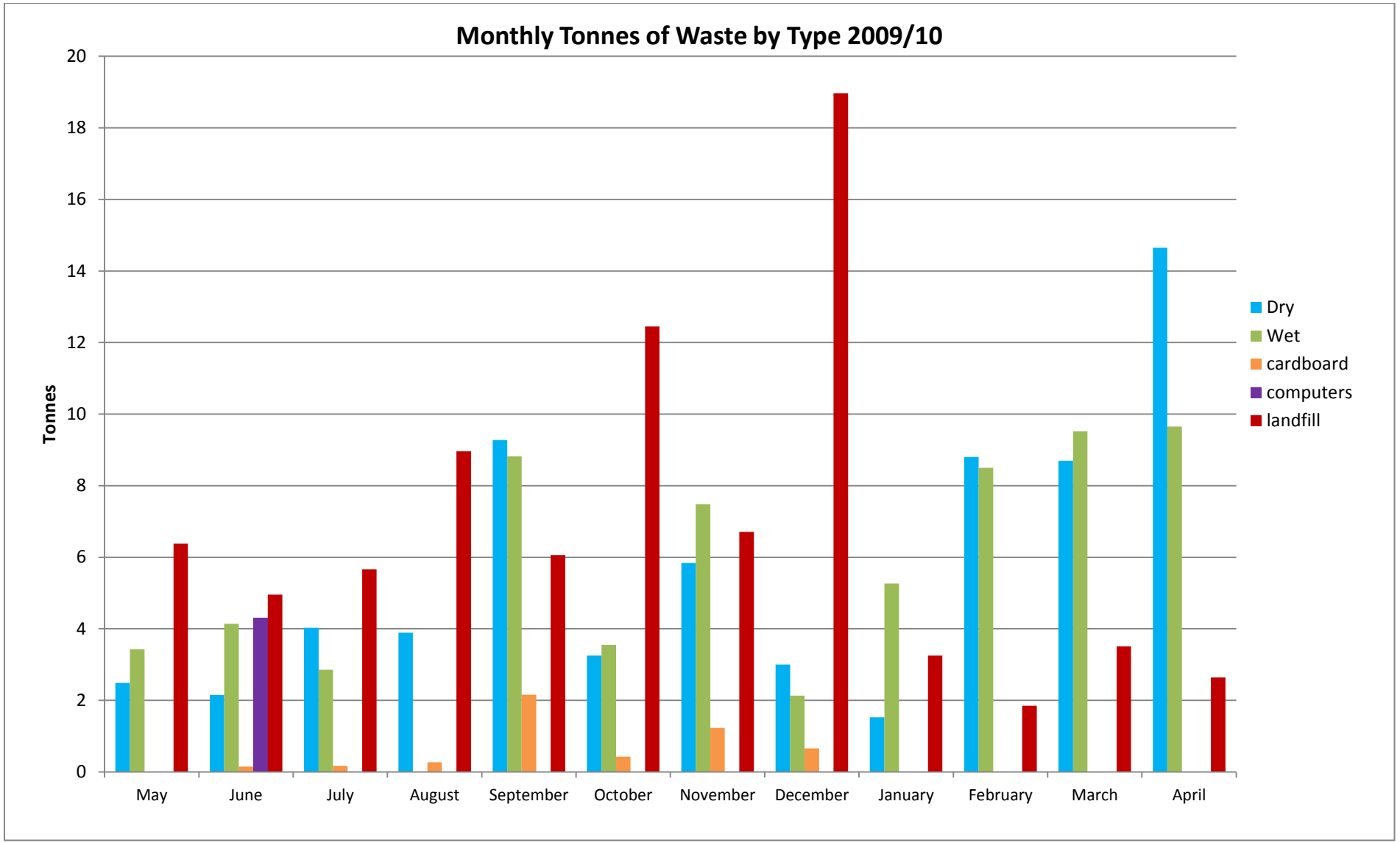
Donated to a local company for refurbishing. They are then programmed to dial 911 and donated to residents in need. When they cannot be refurbished, they are broken down into parts, similar to the other electronics, and sold for scrap.

Printer Cartridges

Sold locally for recycling/refilling.

Appendix 5.4: Waste type by weight for 2009/10 from Mount Allison

This chart displays the same data as Figure 11.2 in the Chapter 11-Solid Waste; however, it allows for an alternative visual representation to best compare trends by waste type. The high reading for December landfill was attributed by Grounds to a Library clean-out project.



Appendix 6.1: Facilities Management Safety Policy

2.08 Facilities Management Hazardous Spill Response (without Annexes)

Aim

The aim of this policy is to provide the overall requirements for the management of hazardous material spills within all work spaces of Facilities Management.

1.0 Classification of Spills

Spills of hazardous materials will be classified as either a Minor spill or a Major spill. Listed below are the criteria for determining extent of the spill:

A **Minor Spill** is one in which **ALL** of the following conditions are met:

- the responsible party is at the scene
- the material spilled is known
- the material spilled is not highly toxic
- the quantity spilled is small - under 2 liters
- there is no fire hazard present
- the spill is completely contained inside a building/area and the material has little or no potential to reach the environment (e.g. via a drain).

A Major Spill is one in which **ANY** of the above conditions are met. If the responder is unsure of the classification of the spill, then it is treated as a Major Spill. All Minor spills will be cleaned up using the procedure in Annex A and all Major spills will be cleaned up using the procedure in Annex B.

3.0 Spill Kits

A spill kit with absorbent capacity of at least 215 litres capacity will stored in the Grounds Shop and in the Heating Plant.

A 17 litres capacity spill kit with drain cover will be stored in the Grounds garbage truck and in the Custodial truck.

These kits will be stocked as outlined in Annex C.

4.0 Responsibilities

All Facilities Management staff is required to understand and comply with this policy.

Grounds Superintendent

The Grounds Superintendent has overall responsibility for coordinating spill response. He/she will conduct onsite coordination for any major spill response and shall ensure that spill kits located in the Grounds Shop & Truck are inspected on a regular basis and restocked as required. If required, he/she shall maintain a storage area for hazardous waste and coordinate the prompt disposal of this waste in a safe and environmentally responsible manner. He/she will also be responsible to ensure that

the Grounds staff is trained and capable of responding to a Major Spill anywhere on Campus. He/she will maintain the emergency response call-out list for Hazardous Spill Response.

Technical Services Manager
The Technical Services Manager shall ensure that spill kit located in the Heating Plant is inspected on a regular basis, and restocked as required. He/she shall also ensure that all Heating Plant engineers have an up to date list of the Grounds Major Spill Responders and are trained in the call-out and reporting procedures for a Major Spill. He/she will also be responsible to ensure that the Heating Plant staff is trained and capable of responding to a Major Spill within the Heating Plant.

Safety & Security Coordinator
The Safety & Security Coordinator shall ensure that the Heating Plant and the Facilities Management Front Desk have current contact information for all Major Spill Responders and the Canadian Coast Guard. He/she will support the Grounds Superintendent or the Technical Services Manager during a major spill response.

5.0 Training

All Facilities Management staff must have basic awareness training in Hazardous Materials Spill Response Training and be able to respond to a Minor Spill. The Joint Health & Safety committee will include this basic awareness training in their annual training plan. The Grounds Superintendant will ensure that an adequate number of Grounds and Heating Plant staff are trained as Major Spill Responders. All Major Spill Responders must have comprehensive spill response training so they can competently deal with a major spill if one arises.

6.0 Reporting

Facilities Management will immediately report any major spill that fits the following three criteria to the New Brunswick Department of the Environment and Local Government (506-856-2374) and the Canadian Coast Guard (1-800-565-1633):

a. Any spill greater than two litres that enter the water supply or sewer system;

b. All hazardous material spills greater than two litres; and/or

c. Flammable liquid spills greater than 200 litres.

The major spill responder shall complete the Spill Response Form (Annex D) as soon as is possible and forward it to the Director of Facilities Management.

Appendix 7.1: Mount Allison's Integrated Pest Management (IPM) Procedure*

(as determined by grounds keeping manager Andrea Ward)

STEP 1: A STANDARD is set to determine the amount of insects, diseases, and weeds which are acceptable

STEP 2: The levels are then MONITORED

STEP 3: The "CULTURAL METHOD" is used whenever possible to ensure the plants are as healthy as possible. This involves keeping a minimum of 4 inches of topsoil on the beds. Kelp, compost, and fertilizer are also used to increase the health of the plants. Water is appropriately added.

STEP 4: If, at this point, pests, weeds, or disease become an issue, MECHANICAL METHODS are used (parts of the plant are removed, wire brushes remove scale, flame thrower burns weeds, high pressure water removes insects, or insects are physically picked off plants)

STEP 5: If this doesn't work, and the problem increases to a level that was not deemed acceptable, ORGANIC means are considered first (such as insecticidal soap, and horticultural oil).

STEP 6: If that doesn't work, and the problem is considered threatening (i.e., Dutch Elm spreading from one tree to another potentially destroying several large trees), COMMERCIAL PESTICIDES are used.

*This applies to all areas of campus except the sports fields which receive pesticide application as needed.

Appendix 11.1 University Fleet

Tractors/ Mowers	Trim National Mower HR Turbo Jacobson Mower M5040 Kubota Tractor 4410 John Deer Tractor 5420 John Deer Tractor Sweepstar 48 Sweeper
Trucks	¾ Ton Chev. 4x4 Custodial: Ford Carpentry Truck Plumbing: Truck 1995 Chev W/T 1500 MACWI Truck 2001 Dodge Dakota 2008 Chev Silverado 5 Ton Garbage Truck
Vans	Carpenter Shop: Econoline Van Ford 2003 Electrical: Van HVAC Van Mail Van

Appendix 11.2 – Criteria for Consideration in the Purchase of New Mail Vehicle

Retrieved from: **http://www.mta.ca/administration/financial/tenders/Goods/Sept%204/rfi_mail_vehicle.pdf**

Description	Points
Environmental footprint/fuel economy/CO2 emissions	30
Design for ergonomics	20
Best fit to Specifications	20
Price	20
Warranty, life cycle costs	5
Operating Costs	5
Total	100

Appendix 11.3 – FM Policy 1.17 Vehicle Fuel Conservation & Idling Policy

Facilities Management Policy

1.XX Vehicle Fuel Conservation & Idling

Approval date:	Mar 31, 2011
Revised:	December 6, 2011
Prepared by:	Director of Facilities Management

1.0 General

Facilities Management is committed to reducing the carbon footprint of the University, to promoting health and safety, and to minimizing its operating costs. Idling vehicles consume fuel, produce carbon emissions, and expose their operators, other staff, students, and faculty to exhaust fumes. It is known that:

a. One hour of idling consumes approximately 3.78 litres of fuel.
b. One hour of idling equates to approximately 53 kilometers of engine wear.
c. Idling causes premature engine wear. An idling engine creates minimal oil pressure resulting in insufficient engine lubrications.
d. Drivers are exposed to elevated levels of exhaust while a vehicle is idling due to the lack of air circulation that typically occurs while the vehicle is in motion.
e. Idling contributes to poor air quality and some building air intakes are in locations where vehicles can park.
f. Idling a gas powered engine for over 10 seconds uses more fuel than restarting the engine.
g. Idling a diesel powered engine for over 30 seconds uses more fuel than restarting the engine.

2.0 Aim

The aim of this policy is to promote responsible actions in regard to the environment and to health and safety, and to minimize fuel costs due to the operation of vehicles. This policy applies to all operators of Facilities Management vehicles.

3.0 Fuel Conservation with Facilities Management Vehicles

Operators of Facilities Management vehicles should conserve fuel by:

a. Minimizing vehicle idling time
b. Reducing vehicle warm-up time. Follow the vehicle manual recommendations for idling in extreme weather conditions.
c. Accelerating gradually and avoid sudden braking if possible.

d. Eliminating unnecessary weight in vehicles.
e. Car-pooling whenever possible.
f. Ensuring that vehicle tires are properly inflated.
g. Ensuring that the vehicle emission control systems are not altered or disconnected.

4.0 Idling Reduction

The following guidelines are to be followed in the operation of any Facilities Management vehicle:

a. Vehicles shall never be left unattended when idling.
b. Engine warm up periods should not exceed thirty (30) seconds.
c. Vehicles should be shut down whenever idling periods are expected to exceed ten (10) seconds for gas powered vehicles and thirty (30) seconds for diesel powered vehicles.

5.0 Idling Exceptions

The exceptions to these guidelines have been identified for the following circumstances:

a. Vehicles for which idling is required as part of a repair, system, or regular pre-check maintenance process.
b. Under extreme weather conditions or any other time when the health and safety of the employee or others may be jeopardized.
c. To ensure the safe operation of the vehicle including defrosting windows and keeping them clear.
d. If the vehicle is not expected to be able to restart due to a mechanical problem.
e. Typical stop and go traffic.