



**Annual Report** | 2008 - 2009



## President's Message

This past year, McMaster University has made many exciting advancements toward creating a more sustainable campus.

Led by the newly-created Office of Sustainability, the University has undertaken many significant initiatives to promote and foster social, economic and environmental sustainability at McMaster. A wide variety of groups, areas, teams and departments across campus are working together to develop and implement more than fifteen sustainability initiatives.

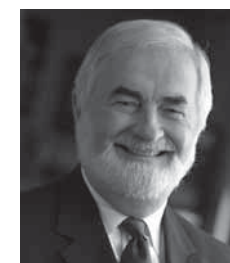
McMaster University has long been known as Canada's "most innovative" university. This reputation reaches beyond academic research into efforts to promote campus sustainability. McMaster recently became one of only two universities in North America to implement a campus-wide ban on single-use plastic bags. This initiative will save approximately 150,000 plastic bags from landfill each year.

Promoting the use of sustainable modes of transportation is an integral step to allow McMaster staff, faculty, students and visitors to get to and from the university easily and efficiently. To support cycling at McMaster, a secure bicycle storage facility, offering space for 48 bicycles, has been constructed to offer safety and security of bicycles parked on campus.

Measuring and managing McMaster's utility consumption is a large part of maintaining campus sustainability. A carbon inventory of McMaster's main campus has been conducted by a third party. This inventory will act as a benchmark for future improvements to resource conservation and management.

McMaster is committed to becoming Canada's most student-centred research university. The Office of Sustainability has worked with faculties and departments across campus to create ten sustainability internship opportunities for the 2009/2010 school year. By providing students with opportunities to gain practical experience by working on sustainability initiatives while earning course credits, McMaster will engage a new generation of leaders in the importance of sustainability. Efforts to connect campus sustainability with research and education will allow students who are passionate about sustainability to approach it in a practical way.

These initiatives are just a few highlights. The Office of Sustainability website, [sustainability.mcmaster.ca](http://sustainability.mcmaster.ca), offers a detailed list of all sustainability initiatives at McMaster University. We invite you to browse these pages or to learn more about these and other developments taking place at McMaster University.



Peter George  
President and Vice-Chancellor

**Mission Statement:**

McMaster University will apply its immense potential and use its creative and innovative campus community to advance sustainable operations and growth. McMaster is helping to shape the minds and values of a new generation of leaders and decision makers by integrating an environmentally, socially and economically sustainable consciousness into all aspects of the university lifecycle through innovation, communication, community engagement and implementation.

**Guiding Principles:**

- Identify and establish sustainable objectives and goals
- Provide a framework for developing sustainable procedures and initiatives
- Communicate awareness to all stakeholders
- Involve, engage and collaborate with all stakeholders
- Develop a university-wide culture of sustainability
- Educate for sustainable community participation
- Respond to concerns as raised by stakeholders
- Conduct all initiatives in a transparent and sustainable manner
- Measure and report annually on the indicators to track progress toward improved sustainability

**Areas of Focus:**

- Transportation
- Green Space
- Energy
- Waste
- Water
- Health & Wellbeing
- Education

**Table of Contents**

<b>A. Transportation .....</b>	<b>4</b>
Automobile Sharing Program .....	4
Transportation Survey .....	5
Secure Bike Storage Facility .....	6
Commuter Challenge .....	7
Campus Bike Rack Reorganization .....	9
<b>B. Green Space .....</b>	<b>10</b>
Permeable Paving .....	10
<b>C. Energy .....</b>	<b>11</b>
Desktop Power Management .....	11
Carbon Inventory .....	12
<b>D. Waste .....</b>	<b>13</b>
Waste Diversion Strategy .....	13
Composting .....	14
Sustainable Procurement .....	15
Water Fountain Retrofits .....	16
Campus Bag Policy .....	17
I.T. Collection, Reuse and Recycle .....	18
<b>E. Water .....</b>	<b>19</b>
Rainwater Harvesting .....	19
<b>F. Health and Wellbeing .....</b>	<b>20</b>
MACtive .....	20
<b>G. Education .....</b>	<b>21</b>
MacEARTH .....	21
Sustainability Internships .....	23
Sustainability Annual Report .....	24
Campus Sustainability Day .....	25
Sustainability Ambassador Program .....	26
<b>Glossary .....</b>	<b>27</b>



## A. Transportation

### Automobile Sharing Program

#### Overview

McMaster University is dedicated to supporting transportation alternatives to single-occupancy vehicles (SOVs). From carpooling incentives to biking infrastructure and a pedestrian-priority campus, many forms of sustainable and active transportation are available to members of the McMaster community. Through the introduction of a campus-wide automobile sharing program, staff, faculty, and students will have yet another alternative to choose from.

Through automobile sharing programs, members are able to borrow a vehicle from the program's fleet for use at an affordable rate. Programs of this nature reduce the number of vehicles on the road as members share the fleet instead of each owning cars of their own. At McMaster, it is anticipated that an automobile sharing program will not only reduce the number of cars coming to and from the university, it will also be an excellent resource for traveling to off-campus meetings and appointments during the day, running errands in the evenings, and for getting to weekend destinations only accessible by car.

#### Objectives

1. Reduce the volume of SOVs traveling to and from McMaster University.
2. Alleviate the demand for parking on campus.
3. Decrease the amount of travel time and increase accessibility to off-campus destinations for members of the McMaster community.

#### Reporting

A group of campus stakeholders have investigated different models of automobile sharing programs and the feasibility of implementing them at McMaster. The search has narrowed, and the group has identified two options available to McMaster University. The first is the corporately owned Zipcar program, and the second is a community-based program called Hamilton Car Share. The latter is currently operating throughout the City of Hamilton.

The stakeholder group is working to weigh the advantages of each provider to determine which is best suited for McMaster. The feasibility of implementing the program on campus is still under investigation.

Zipcar: <http://www.zipcar.com/> Hamilton Car Share: <http://www.peoplescar.org/>

#### Collaborators

The Office of Sustainability has collaborated with Purchasing Resources, Environmental & Occupational Health Support Services (EOHSS), and Security & Parking Services and hopes to engage the student body via McMaster Students Union's (MSU) MacGreen.



### Transportation Survey

#### Overview

Ensuring that members of the McMaster community have access to safe, sustainable, healthy, and convenient transportation options is very important to the university. As such, a variety of Transportation Demand Management (TDM) measures have been introduced to meet the campus community's diverse and essential transportation needs. Some of these measures include bike racks and secure storage units, an on-campus GO Transit terminal, and a student U-Pass program.

In order to maintain valued communication with the McMaster community about TDM initiatives, a cross-campus transportation survey is being developed to discover commuters' current transportation behaviour and preferences. With this information, it can be determined how campus TDM measures can evolve to appropriately meet the needs of the campus community and develop a culture of sustainability around transportation at McMaster.

#### Objectives

1. Determine the transportation preferences and usage patterns of the McMaster University community.
2. Utilize the survey's findings to increase the effectiveness of McMaster's TDM measures with particular attention to their sustainability.

#### Reporting

This initiative is being undertaken as a component of a Master's thesis within the School of Geography & Earth Sciences. The survey is currently in the research and development stage and is on track to be launched in the Fall/Winter 2010. Analysis of the survey response is expected to occur over the Summer of 2011 so that recommendations may be made in the Fall of 2011.

#### Collaborators

The Office of Sustainability will be collaborating with the School of Geography and Earth Sciences (SEGS) on the survey's development. A previous survey was implemented by Dr. Antonio Paez of SEGS with support from Parking Services at McMaster. For implementation, in addition to the campus community at large, the Office of Sustainability will interact with Human Resources and the Office of the Registrar to devise communication mechanisms to recruit participants in the survey.





## Secure Bike Storage Facility

### Overview

Cycling is an extremely popular commuting option for students, faculty, staff, and visitors to McMaster University. McMaster's Hamilton Campus is easily accessible by bicycle from many of the university's surrounding communities. The campus presently offers public bike racks as well as rentable secure bike lockers to encourage cycling commuters. A centralized medium-security storage facility would offer cyclists another secure option for housing bikes on campus.

### Objectives

1. Further promote cycling as a prime mode of transportation among the McMaster community.
2. Offer cyclists a variety of parking and storage options when leaving their bikes on campus.

### Reporting

Facility Services, Security & Parking Services, and the Office of Sustainability have worked together to determine potential locations for the secure bike storage facility within McMaster's Hamilton Campus. These options were assessed in collaboration with a variety of campus stakeholders. The ideal location, adjacent to the west side of Chester New Hall (CNH), was chosen to maximize safety and security, access to the David Braley Athletic Centre (DBAC), the McMaster University Student Centre (MUSC), and the North Quad residences as well as provide sufficient storage for 48 bicycles. The final design of the secure storage facility features swipe card entry, video surveillance, a fence, and will have the capacity to hold over 40 bikes. The project has been completed as of September 25th, 2009.

### Collaborators

The Office of Sustainability has worked in conjunction with Security & Parking Services and Facility Services on the design and implementation of the secure bike storage facility.



## Commuter Challenge

### Overview

The Commuter Challenge is a national event aimed at encouraging the use of sustainable and active modes of transportation. Every year throughout the first week of June, participants log their daily sustainable commutes as part of this friendly competition to see which Canadian city has the highest participation rate. McMaster competes within the City of Hamilton among other similarly sized organizations in the area.

At McMaster, the Commuter Challenge is simultaneously an opportunity to celebrate those who already opt for sustainable and active transportation while encouraging others who usually drive alone to try a more sustainable option. The Commuter Challenge is an annual success and is always well received by the McMaster community.

### Objectives

1. Increase awareness of sustainable transportation.
2. Encourage the use of alternatives to SOVs.
3. Celebrate and promote the McMaster community's support for sustainable and active transportation.

### Reporting

The Office of Sustainability has coordinated the Commuter Challenge for the McMaster community by administering registration and hosting special events throughout the week including the Pancake Breakfast kickoff, Clean Air Day celebration, and providing information, support, and Free Bike Repairs courtesy of MACycle.

This year, McMaster surpassed its goal of 750 participants with a final tally of 793 sustainable commuters! McMaster also won the city-wide challenge among all of Hamilton's participating employers. McMaster University has won this event for over five consecutive years. The University's repeated successes would however not be possible without dedicated sustainable commuters, the Commuter Challenge Department Coordinators who engage their colleagues, and all the event's collaborators who make the implementation a seamless process.

### Collaborators

The Commuter Challenge is truly a cross-campus effort as Department Coordinators come from a wide array of campus departments. The Office of Sustainability also works with Security & Parking Services, MACycle, MacGreen, the City of Hamilton, as well as corporate and community partners to host the Commuter Challenge.



**Quote**

“Designed to encourage Canadians to opt for more environmentally friendly modes of transportation, this year’s [Commuter Challenge] proved to be another success. With incentives like free one-day access to the HSR, a complimentary pancake breakfast and expert bike-repair services, it’s no surprise that McMaster surpassed its goal of 750 commuters to reach an impressive total of 793 participants.

In total, those participants saved more than 7,000 kilograms of CO2 and \$1,138 dollars in fuel. Some participants saved as many as 900 kilograms on their own during the week of eco-friendly transportation choices.” – McMaster Daily News

Reference: <http://dailynews.mcmaster.ca/worthmentioning.cfm?id=5155>

**Campus Bike Rack Reorganization**

**Overview**

McMaster recognizes cycling as an active and sustainable transportation option. As such, its Hamilton campus houses over 1,000 bicycle parking spots to support its cycling community. It has been noticed that some of these bike rack locations are more heavily utilized than others. As a result, a review and inventory of all bike rack locations will allow for the creation of an interactive forum to gather feedback from the campus community. This information will also be the foundation for a bike-rack reorganization plan which will aim to place bike racks in high demand areas to best serve the McMaster cycling community.

**Objectives**

1. Increase the accessibility of bikes racks to campus cyclists.
2. Eliminate the need to lock bikes to trees and poles.
3. Encourage cycling as a sustainable transportation method among the campus community.

**Reporting**

An interactive Google Map detailing the locations of all the current bike racks has been used as a tool for the McMaster community to make recommendations on optimal rack locations around campus. Taking this feedback into consideration, a reorganization of campus bike racks has been performed so that their distribution best meets the demand. An emphasis has also been placed on security and accessibility as the project team has aimed to place bike racks in highly visible areas in centralized hubs. The Office of Sustainability will continually review and take recommendations from the campus community regarding optimal bike rack placement on campus.

**Collaborators**

The project team consists of representatives from the Office of Sustainability, Facility Services, Security and Parking Services, MacGreen, and MACycle. Those members of the McMaster community who offer their recommendations play a vital role in developing the reorganization plan.



## B. Green Space

### Permeable Paving

#### Overview

A common issue facing urban settings is the decrease of permeable surfaces which are being built or paved over. Instances of heavy rainfall and surface runoff as well as urban heat island effect are problems resulting from this change in land use. Both concerns stem from the extensive use of impermeable paving and building surfaces. A potential solution to this problem is to increase the amount of surface material conducive to infiltration and heat absorption. Permeable paving is an alternative paving option which allows for heightened rain water infiltration and a reduction in urban heat island effect. This system is able to maintain most of the support functions of a paved surface while also boasting more sustainable aspects. A pilot permeable paving project is being developed to introduce this infrastructure option to McMaster University.

#### Objectives

1. Increase the drainage potential of surfaces on campus.
2. Decrease the amount of paved surfaces contributing to an urban heat island effect.
3. Maintain the amount of campus green space at McMaster University.

#### Reporting

Permeable paving systems are multifunctional and provide solutions to a variety of land use problems.

Following an investigation into options for a pilot project, Facility Services recommended that this system could have a practical application as an erosion control mechanism. Further exploration of the role that a permeable paving system could play at McMaster University is currently underway.

A pilot project is expected to launch in the Spring of 2010. The resilience of the system will be evaluated over the winter months and into the Spring of 2011. Depending on the success of the pilot, a more widespread implementation of permeable paving may be recommended.

#### Collaborators

The Office of Sustainability has collaborated with Facility Services on the research and investigation of this initiative.



## C. Energy

### Desktop Power Management

#### Overview

Efficient energy use and conservation is a key area of focus for McMaster University's Office of Sustainability. As an intensive research institution, the university requires large quantities of energy to maintain its operations. This presents several opportunities for ways to conserve, manage, and minimize McMaster's energy consumption.

An opportune area for energy conservation at McMaster University is within University Technology Services (UTS) student computer labs. This area of opportunity exists in the form of phantom energy – energy that is consumed when the computers are left on but are not in use. In order to maximize the computer labs' energy-saving potential, a group of stakeholders have been working on a strategy to seize this opportunity.

#### Objectives

1. Decrease the amount of energy wasted by campus computers when they are on but not in use.
2. Allow computers to be shut down so that software updates can be accepted. This will indirectly lower the number of computer viruses attracted.
3. Decrease the risk of fires caused when computers are left on unattended for extended periods of time.

#### Reporting

In order to maximize energy savings from the reduction in phantom energy by UTS student labs, desktop power management software has been identified whose function is to turn off and restart computers at a designated time. This software system can be programmed to accommodate start-up and shut-down times based on lab operating schedules as well as weekend and holiday schedules.

Feedback from campus stakeholders on this program was sought in Spring 2009, and the software system was purchased in September 2009. The software system will be installed over the winter of 2009/2010 and will measure relevant baseline energy use once lab sessions begin in January. After obtaining an accurate reflection of the level of energy consumption from the student labs, the software will be tailored to the appropriate shut-down/start-up schedule. The software will be able to track and measure energy savings beginning in the Winter of 2010. A progress report on this initiative will be available in 2010.

#### Collaborators

The Office of Sustainability has worked with UTS and Facility Services on the investigation and implementation of the Desktop Power Management initiative.





## Carbon Inventory

### Overview

The release of carbon dioxide into the atmosphere is understood to be a chief catalyst of climate change. Attempts to identify areas and activities that produce high levels of carbon dioxide are essential to reducing the size of a carbon footprint—the measure of emitted carbon dioxide. McMaster has recognized the importance of managing its carbon footprints. Given this, a carbon inventory for McMaster University's Hamilton Campus was initiated by Facility Services who then partnered with the Office of Sustainability to work with a team of cross-campus stakeholders to gather information to be used for the inventory. Conducting an inventory of carbon emissions is invaluable for identifying areas where carbon reductions can be made as well as areas to celebrate an already-minimized footprint.

### Objectives

1. Determine the carbon footprint of McMaster University's Hamilton Campus.
2. Designate areas for improvement where carbon output can be lowered.
3. Allow for the creation of reduction targets.

### Reporting

The Office of Sustainability liaised with university stakeholders to collect information on campus emission sources. A third party, Zero Footprint, utilized this data to conduct the audit for McMaster's Hamilton Campus and calculate its overall carbon footprint. Zero Footprint produced a report detailing their findings using data collected from the baseline year 2007. This information can now be used as a tool to outline goals and objectives for future emission reductions. The Office of Sustainability will work with campus stakeholders and utilize the recommendations from the report to create reduction targets in areas offering opportunity for savings. The report will be made publicly available on the Office of Sustainability's website in the Fall of 2009.

### Collaborators

Facility Services, Security & Parking Services, Hospitality Services, and the Office of Sustainability are the principal collaborators on the investigation and data collection for McMaster's carbon inventory. Zero Footprint is the third-party stakeholder responsible for calculating the carbon footprint and creating the inventory report.



## D. Waste

## Waste Diversion Strategy

### Overview

Ongoing communication about waste reduction and diversion is a key area of focus for the Office of Sustainability. Each year, the university welcomes new students, staff, and faculty to the McMaster community, many of whom are coming from outside of Hamilton. Recycling programs vary across municipalities as each has a different capacity to divert waste. Given this variance, continual communication on McMaster's recycling and waste reduction program is necessary to maintain McMaster's exceptional diversion rate.

The Waste Diversion Strategy will seek to deliver highly visible and consistent messaging about McMaster's recycling program. In doing so, new and existing members of the campus community, as well as visitors, will have easy access to information which will allow for widespread participation in McMaster's recycling program.

### Objectives

1. Determine current waste disposal behaviour and develop new goals and strategies for waste management and communication.
2. Heighten the awareness of McMaster's students, staff, faculty, and visitors around McMaster's recycling program.
3. Engage the campus community to participate in recycling at McMaster.

### Reporting

A waste audit of McMaster's Hamilton Campus was conducted to determine current waste diversion and disposal habits. These results have provided information on how campus waste management efforts can be tailored to best serve and educate the campus community. In an effort to further increase waste diversion and to more closely resemble the City of Hamilton's recycling program, McMaster's Office of Sustainability has worked with Facility Services and McMaster's waste services provider to expand the program's capacity to recycle a wider range of plastics.

To communicate this expansion in the program, McMaster's Office of Sustainability worked closely with Media Production Services to develop a communications plan to relay these changes. The plan features newly designed campus waste and recycling posters. This signage is highly visible and provides the address of the Office of Sustainability's website, which hosts a detailed guide to McMaster's recycling program.

### Collaborators

The Office of Sustainability worked with Facility Services, MacGreen, and Media Production Services on the Waste Diversion Strategy. Valuable recommendations and reduction measures were also provided by the campus waste service provider, Waste Systems Inc. (WSI).





## Composting

### Overview

Composting is an extremely sustainable waste diversion option as organic material can be transformed into compost for gardening and landscaping. It creates a closed loop whereby “waste” is transformed into usable material. With a community of tens of thousands of consumers on campus every day, the benefits of including composting as a waste diversion option for McMaster University’s Hamilton Campus are plentiful.

### Objectives

1. Determine the feasibility of, and investigate options for, including composting as a form of campus waste diversion.
2. Decrease the amount of waste going to landfill which could be composted back into usable organic material.
3. Utilize the concept and process of composting to develop educational opportunities on campus.

### Reporting

Research has been conducted into a variety of composting methods and best practices of other institutions. Based on research, investigation is underway to determine a viable way to incorporate composting into operations at McMaster. At this time, two possible options include onsite vermi-composting or engagement with an external organization to remove organic waste from campus. Investigation is still underway and is expected to continue throughout the Fall of 2009.

### Collaborators

The Office of Sustainability has worked with a volunteer from MacGreen on the research component of this initiative. Facility Services and Hospitality Services have been actively involved throughout the investigation process.

### Quote

“It is estimated that about 50 percent of the total waste stream could be composted. Composting not only helps to reduce the amount of waste going to landfills, it produces a valuable soil amendment which can improve the texture and fertility of the soil.” – Composting Council of Canada

Reference: <http://www.compost.org/natural.html>



## Sustainable Procurement

### Overview

McMaster’s practices for product purchasing will continue to be part of the university’s growing culture of sustainability through a variety of sustainable procurement initiatives. As a large and diversified institution, McMaster University has several relationships with external suppliers. The university has begun working with these suppliers to achieve McMaster’s sustainability goals while also enhancing vendors’ reputations for being sustainability-conscious suppliers.

### Objectives

1. Decrease the volume of waste being sent to landfill due to McMaster’s operations and purchases by decreasing waste generated at the source.
2. Consciously procure items that have more sustainable and recycled content, less packaging, and are proven to come from sustainable sources.

### Reporting

The Office of Sustainability, Purchasing Resources, Media Production Services, Facility Services and the CALM Collective (Certificate for Advanced Leadership and Management) have worked with McMaster’s preferred Office Supply vendor, Grand & Toy, to ensure that items are delivered in reusable, collapsible totes rather than cardboard boxes and that there are no more than two deliveries to campus each week. This initiative has been facilitated through the Request for Proposal (RFP) process and resulted not only in a decrease in waste and carbon emissions, but a savings of over two million dollars to the university over the five year life of the contract.

### Collaborators

The Office of Sustainability, Purchasing Resources, Media Production Services, Facility Services, and the CALM Collective have worked together to facilitate and implement this initiative.



## Water Fountain Retrofits

### Overview

McMaster's Office of Sustainability's waste reduction strategy regards reducing and reusing as preferable to recycling. To align with this strategy and reduce unnecessary waste generated by single-use plastic water bottles, infrastructure and education promoting the use of reusable water bottles throughout the university will help support the shift away from their disposable counterparts.

### Objectives

1. Decrease the number of single-use plastic water bottles being consumed by the campus community by providing the infrastructure to support the refilling of reusable bottles.
2. Promote the campus-wide use of reusable water bottles and water filling stations.

### Reporting

One water fountain in every academic and administrative building on campus has been retrofitted with a refilling station as of September 2009. These stations include a bubbler for drinking, a gooseneck spout for refilling and a chiller to provide cold water. The retrofits are accompanied by an educational campaign and signage, courtesy of Media Production Services, promoting the use of refillable water bottles.

### Collaborators

The campaign and retrofits have been a collaborative effort between the Office of Sustainability, Facility Services, Media Production Services, and the McMaster Students Union's (MSU) MacGreen.



## Campus Bag Policy

### Overview

It has been determined that Canadians consume billions of plastic bags every year. Given the availability of more sustainable alternatives, the extinction of the plastic bag is imminent. Various departments across McMaster recognize the necessary next step of reducing plastic bags and have consequently already adopted alternatives. A more formal communication of these efforts was a natural progression to commend those who have shifted away from purchasing plastic bags while setting a standard for best practices.

### Objectives

1. Recognize the campus-wide shift towards more sustainable bag options.
2. Set a standard for best practices.

### Reporting

The Office of Sustainability collaborated with faculties and departments to define an approach to single-use plastic bags and switch to a more sustainable alternative. A campus-wide Plastic Bag Policy, banning the distribution of single-use plastic bags, has been created and approved. This policy also offers details about alternative bag options available for distribution on campus.

### Collaborators

The Office of Sustainability collaborated with various faculties and departments across campus including, but not limited to: Titles Bookstore, McMaster Student's Union, Mail Services, Media Production Services, School of Graduate Studies, Employee Health Services, Hospitality Services, Hamilton Health Sciences Volunteer Association, ABB and HSC Stores, McMaster Museum of Art, the Off-Campus Resource Centre, Judicial Affairs and Student Liaison.





## E. Water

### I.T. Collection, Reuse and Recycle

#### Overview

Managing the removal and disposal of electronic equipment from campus is important to ensure that these items are being disposed of in a socially and environmentally responsible manner.

#### Objectives

1. Provide the opportunity to reuse outdated electronic equipment from campus.
2. Ensure that electronic equipment from McMaster is being fully recycled.
3. Facilitate an event that encourages the collection and reuse of outdated electronic equipment before having it recycled.

#### Reporting

As part of McMaster's Earth Day celebration on April 22nd 2009 University Technology Services, Facility Services and the Office of Sustainability worked together to encourage the campus community to offer up their outdated electronic equipment for reuse rather than going directly to recycling. The Earth Day Celebration was so successful that UTS and the Office of Sustainability will be working together once again to host this event as part of McMaster's Campus Sustainability Day celebration in October.

#### Collaborators

McMaster's University Technology Services offered free hard drive sanitization one week prior to, and during, the Earth Day event, as well as providing two employees to assist throughout the day. UTS will be providing these services to the campus community once again for the next IT Collection, Reuse and Recycle event being held on Sustainability Day in October.

For Earth Day 2009, McMaster's Facility Services assisted faculty and staff who were offering up their outdated IT devices by physically collecting these items from around campus to be reused or recycled during the event.

At the end of McMaster's Sustainability Day celebration in October, WSI, McMaster's waste services provider, will be collecting all left over electronics to be taken for complete recycling.



### Rainwater Harvesting

#### Overview

Rainwater has historically been harvested for domestic use, but with the improvement of well-drilling technology, widespread practice of rainwater harvesting was abandoned. As these advancements were made, highly technical modern systems were developed. Today, municipal water is treated to meet stringent standards. In a facility such as a campus building, upwards of 75% of this high-quality water is literally being flushed away. McMaster has realized the potential to reduce the demand on the municipal system and conserve a significant amount of natural resources by adopting rainwater harvesting systems.

#### Objectives

1. Reduce McMaster's dependence on the municipal water supply.
2. Conserve water resources.
3. Decrease storm-water runoff from campus buildings.
4. Educate students and the McMaster community at large on the benefits and sustainability of adopting rainwater harvesting systems.

#### Reporting

Facility Services has incorporated a rainwater harvesting system in the David Braley Athletic Centre and another into the design of the new Engineering Building at McMaster's Hamilton campus. These systems capture rainwater to be used within their buildings for purposes other than human consumption, such as flushing toilets. The new Engineering Building's system will have two 25,000 litre tanks connected to the building's roof leaders. The system is expected to be fully operational in the Fall of 2009.

#### Collaborators

Facility Services is the principal party working on rainwater harvesting at McMaster University and is collaborating with the Office of Sustainability on communication and reporting of this initiative. The Faculty of Engineering had been heavily involved with the most recent system being installed on the roof of McMaster's new Engineering Building.

#### Quote

"Catch rain where it falls." – Anonymous Proverb





## F. Health and Wellbeing

### MACTive

#### Overview

MACTive is an eight-week physical activity challenge hosted by the Healthy Workplace Group. Teams of employees engage in physical exercise and fitness activities throughout the challenge and log their progress throughout

#### Objectives

1. Increase the physical health of McMaster employees.
2. Decrease instances of long- and short-term disability.
3. Heighten employee engagement and wellbeing.

#### Implementation

Participants are awarded prizes in recognition of their participation, where they meet the minimum threshold of weekly minutes.

#### Reporting

For the 2009 MACTive challenge, 460 employees participated on 69 teams and logged 1,093,554 minutes of physical activity.

#### Collaborators

The Healthy Workplace Group organizes and runs the MACTive Challenge. The Office of Sustainability supports the event under the "Health & Wellbeing" area of focus and by participating on the Healthy Workplace Group Committee.



## G. Education

### MacEARTH

#### Overview

Launched in 2008-09, MacEARTH (Environmentally Aware Residents Trying to Help) is a residence-based student leadership program. MacEARTH is intended to provide on-campus students with the opportunity to develop skills through working collectively to implement educational-based awareness programming that seeks to educate their fellow residents and build a culture of sustainability throughout 3700 students located in 12 buildings. This leadership program is student-driven and formally advised and supported by professional staff from the Residence Life Management Team.

In 2008-09 the group was able to successfully implement a variety of educational programs including a Residence Energy Challenge (November), Sustainability Film Night (December), Water Awareness Day Campaign (March), and Junk Dunk Relay (April).

The MacEARTH program is intended to be organized annually to ensure that all new on-campus students have the opportunity to take part in developing of a culture of sustainability at McMaster University.

#### Objectives

1. Engage students living in residence in thinking about and practicing sustainability-conscious behaviour.
2. Decrease the waste created within residences and increase recycling habits.
3. Conserve energy within residence buildings.
4. To create a culture of sustainability, and to empower students with the knowledge and skills to make positive, long lasting change towards a sustainable future.

#### Reporting

In 2008-09, MacEARTH had 15-20 residence students actively involved in the planning and implementing of four educational programs. During the Residence Energy Challenge over 100 active and passive programs were run by Residence Life Student Staff in support of the challenge. Additionally, over 250 students completed a 'conservation pledge' indicating they would reduce their energy consumption, minimize their ecological footprint, and take action against global environmental burdens by implementing ten small changes to their daily routines over the course of a six week period.

The parties involved met to discuss their vision of the 2009-10 program throughout the Spring and Summer. The 2009-10 MacEARTH program was developed throughout the Summer for implementation in late Fall. Further reporting will be available in 2010.





### Collaborators

Collaborators for the MacEARTH program include Housing & Conference Services (Residence Life Office and Residence Facilities Team), Inter Residence Council, Residence Life Student Staff Members, MacGreen, Office of Sustainability, and Sierra Youth Coalition.

### Sustainability Internships

#### Overview

Sustainability is a growing area of academic interest spanning a variety of disciplines. Providing opportunities for students to engage in topics of sustainability through their studies will allow for practical application of the knowledge they gain through course content.

#### Objectives

1. Provide students with real-world experience related to sustainability.
2. Incorporate sustainability into students' education in a practical way.

#### Reporting

The Office of Sustainability has worked with faculty representatives across campus to develop sustainability internship opportunities within a handful of select courses. A collaborative effort has been put forth by the Office of Sustainability and faculty representatives to determine the process for recruiting and selecting student interns. Once selected, the students will work and learn in conjunction with the Office of Sustainability on sustainable initiatives that directly impact McMaster and on their course work for the class which the internship is provided through. Upon successful completion of their internship and course work, the student's achievements will be reported, and they will receive their full course credit.



The first group of interns will be selected to participate during the Fall/Winter 2009 session. Reporting on the success of this initiative and the potential to expand the program will be provided in greater detail in the 2010 Sustainability Annual Report.

\* NOTE: Sustainability Internships are non-paid experiential opportunities, which are recognized as academic placements with Experiential Education, Faculty of Social Sciences. Course credit is awarded to successful participants by the department through which the internship is offered.

#### Collaborators

The Office of Sustainability has collaborated with representatives from the Faculty of Engineering and Experiential Education, Faculty of Social Sciences on the development and implementation of Sustainability Internship opportunities. McMaster's University Technology Services has provided practical research opportunities to support a number of these internships.

## Sustainability Annual Report

### Overview

The Office of Sustainability will author an annual report detailing the overview, objectives, reporting, and collaborations of all sustainable initiatives for the current year. These initiatives and the report itself are organized following the areas of focus set by McMaster's Office of Sustainability.

### Objectives

1. Provide efficient communication and transparency of the Office of Sustainability's activities to the McMaster community and broader public.
2. Record and track the objectives, implementation process, and results in order to create tangible goals.

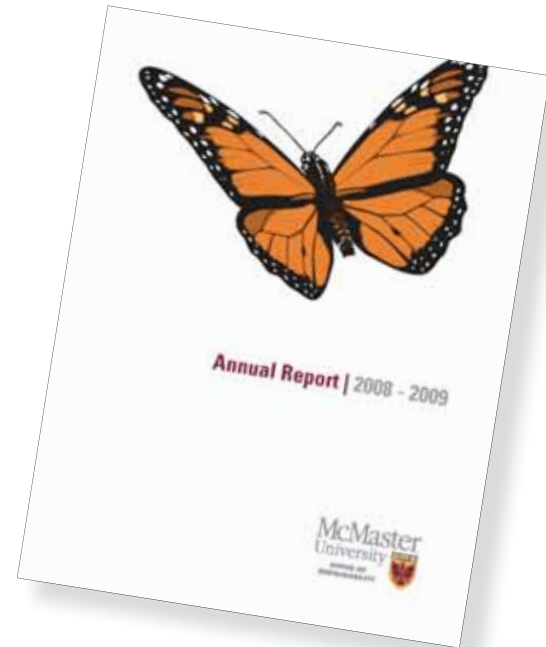
### Reporting

The seven areas of focus were determined by the Sustainability Steering Committee, Sustainability Advisory Community, and stakeholders within the campus community at large. Initiatives corresponding to each area of focus were pursued by the Office of Sustainability in conjunction with individuals, groups, and organizations both within and external to campus. The final list of the 2009 Sustainability Initiatives was available for review in January 2009 with final recommendations and feedback received in March 2009.

Those initiatives that have been successfully implemented prior to October 1st, 2009 are reported in full within the Annual Report. Initiatives that are still in progress will present a status report within the "Reporting" section. All initiatives are anticipated to achieve full implementation before the end of each calendar year. Initiatives designed to carry over for more than one 12-month period are described as such within the Annual Report and will be further reported on in the following year. The Sustainability Annual Report is authored throughout September to be available for final release on Sustainability Day, held annually in October.

### Collaborators

The Office of Sustainability works with the campus community at large on the development and implementation of Sustainability initiatives for McMaster. The Sustainability Promotions and Communications Advisory Committee and the Sustainability Steering Committee provide feedback and recommendations on the final list of proposed initiatives to be pursued. Research, investigation, development and successful implementation of Sustainability Initiatives are truly campus-wide collaborative efforts put forth by many staff, faculty, students, and external partners.



## Campus Sustainability Day

### Overview

Held annually in October, Campus Sustainability Day is a day to celebrate sustainability in higher education. Volunteers from across the University are encouraged to participate in this event to share their ideas about sustainability and highlight achievements that have been made across campus.

### Objectives

1. Celebrate sustainability at McMaster University and its role in higher education.
2. Educate the McMaster and broader communities on sustainable happenings throughout campus.
3. Reach out to the McMaster community and external partners for their input and involvement in sustainable initiatives on campus.

### Reporting

The Office of Sustainability will be hosting McMaster's Campus Sustainability Day in the McMaster University Student Centre (MUSC) in order to promote and celebrate the achievements made by all participating campus faculties, departments, groups, offices and relevant affiliates toward sustainability.

Planning and outreach for the event took place throughout August and September 2009. The 2009 Sustainability Day is taking place at McMaster on October 22, 2009. This will be the second Sustainability Day event hosted at McMaster University.

### Collaborators

The Office of Sustainability works with a wide array of campus faculties, departments, groups, and offices well as some external partners to host this event.



## Sustainability Ambassador Program

### Overview

To maintain effective communication and engagement across campus the Sustainability Ambassador Program has been proposed to facilitate two-way information sharing between the Office of Sustainability and the campus community.

### Objectives

1. Achieve two-way communication on topics related to campus sustainability between the Office of Sustainability and campus community.
2. Gain valuable information and awareness of concerns from all areas of McMaster's community.
3. Engage the campus community in sustainability initiatives.
4. Provide a tool for information sharing on topics related to sustainability.

### Reporting

The Office of Sustainability is working to engage one individual in each area of the University to represent and champion sustainability in their area. The Office of Sustainability will host a "meet and greet" for all Sustainability Ambassadors upon the official program launch in the Fall of 2009. A sustainability toolkit will be provided online to aid in facilitation of sustainability programs within each area. The name and department of each Sustainability Ambassador has been made available electronically through the Office of Sustainability website. Campus community members may identify their area's ambassador through this online directory as well as volunteer for the role if their area is found to be without an Ambassador.

### Collaborators

Faculties, departments, offices and groups campus-wide have collaborated to facilitate the implementation of this initiative.



## Glossary

### Active Transportation

Active Transportation is any form of human-powered transportation. Examples include walking, cycling, wheeling, in-line skating, skateboarding, and ice skating.

Reference: [http://www.phac-aspc.gc.ca/pau-uap/fitness/active\\_trans.htm](http://www.phac-aspc.gc.ca/pau-uap/fitness/active_trans.htm)

### Carbon Footprint

A carbon footprint is the measure of the impact human activities have on the environment in terms of the amount of greenhouse gas produced, measured in tonnes of carbon dioxide.

Reference: [http://www.isa-research.co.uk/docs/ISA-UK\\_Report\\_07-01\\_carbon\\_footprint.pdf](http://www.isa-research.co.uk/docs/ISA-UK_Report_07-01_carbon_footprint.pdf)

### Heat Island

The term "heat island" describes built up areas that are hotter than nearby rural areas. Heat islands can affect communities by increasing summertime peak energy demand, air conditioning costs, air pollution and greenhouse gas emissions, heat-related illness and mortality, and water quality – United States Environmental Protection Agency, 2009

Reference: <http://www.epa.gov/heatisland/>

### Single Occupancy Vehicles (SOVs)

A single-occupancy vehicle is a privately operated vehicle in which the only occupant is the driver. Single-occupancy vehicles are cited to be high pollutants, cause traffic gridlock, contribute to climate change, as well as waste fuel and money.

Reference: <http://air.greenventure.ca/healthy-commuting>

### Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is the use of policies, programs, services and products to influence whether, why, when, where, and how people travel. TDM measures can lead people to shift their mode of transportation, make fewer trips, and/or drive more efficiently.

Reference: [http://www.sustainablecommunities.fcm.ca/files/Capacity\\_Building\\_Transportation/Transportation-DemandManagement-e.pdf](http://www.sustainablecommunities.fcm.ca/files/Capacity_Building_Transportation/Transportation-DemandManagement-e.pdf)

### U-Pass

A U-Pass is a universal public transit pass available to university students. A levy for this pass is included in student fees. McMaster offers a U-Pass program which allows students unlimited access to the Hamilton Street Railway (HSR) from September to April inclusive.







<http://sustainability.mcmaster.ca>