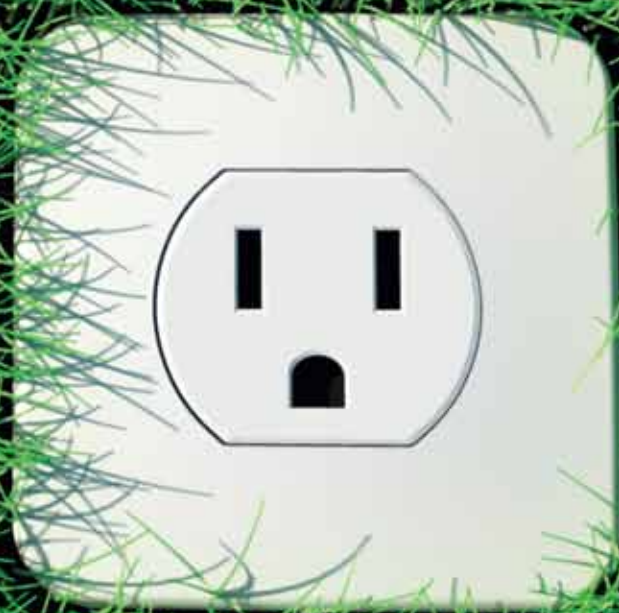


Ontario Universities: Going Greener Report 2011



> Executive Summary

This report highlights the “green” improvements and achievements undertaken by Ontario universities. It is based on a survey completed by 19 Ontario universities; a total of 21 campuses participated.

The 2011 Survey (the third annual report on Going Greener) indicated that:

- More Ontario universities are engaging students, faculty and staff in the shared goal of building a green culture on campus.
- Ontario universities have taken further steps in the past year to reduce environmental impacts through lowering emissions, measuring and minimizing energy use, and introducing and/or improving green standards in university buildings.
- There have been marked improvements and creative approaches to waste and water management on Ontario campuses.
- Further reduction in emissions is occurring on campuses largely through better management of transportation fleets and incentives for using carpools or public transit.
- In addition to taking steps within their campuses, universities require green practices from their vendors, thus enhancing their environmental impact beyond campus borders.
- Research centres devoted to sustainability and green initiatives are also being established at universities across the province, and these initiatives are being further strengthened through partnerships with the Broader Public Sector.

> Introduction

Ontario universities have continued to demonstrate their leadership in going greener. A pledge made in 2009 brought institutional commitments together into a collective one, which provided further momentum to campus efforts and annual reporting on progress. Last spring, Executive Heads of Ontario universities renewed their determination to advance sustainability and that is demonstrated in this latest survey, where improvements can be seen in almost all categories.



> The Survey

The 2011 Survey of Green Initiatives was sent to all universities in Ontario. A total of 19 universities participated in the survey, with the University of Toronto's three campuses responding separately, resulting in a total of 21 campus responses. The 2011 data reported throughout the document is a reflection of the responses received from campuses that completed the survey, and illustrates the steps they have taken to further improve green awareness from an already high standard set in 2010.



> The 2011 Survey Covers Nine Areas

- Building a Green Culture;
- Emissions and Energy Use;
- Green Buildings;
- Waste Management;
- Water Management;
- Green Transportation;
- Purchasing and Procurement;
- Teaching and Learning; and
- Partnerships.

> Building a Green Culture

Ontario universities are embedding green initiatives in their institutions through assessments, resource commitments and stakeholder consultations. University students are actively engaged in green initiatives. Eighty-five per cent of university campuses indicated that students have the opportunity to contribute towards solving the institution's sustainability challenges through extracurricular activities, and/or as part of their on-campus living arrangements. Universities are engaging their students in unique ways and providing them with the opportunity to drive the green culture on campus.

The following initiatives are just a few examples of how campuses are engaging students, faculty and staff:

York University – Res Race to Zero

Res Race to Zero is an energy challenge in undergrad residences at York University. The challenge in each residence is to lower consumption in the month of March from the levels set the previous March. The residence with the highest per capita energy reduction over the month (kilowatt usage per student) is named the winner of the Res Race to Zero. Historically, winners have chosen to reinvest their prize money back into sustainability initiatives within their residences.

University of Toronto – St. George Campus – Engaging Students

Bikechain

Funded in part by a student levy, Bikechain is a free bicycle repair, rental and education centre, which employs students as part of its sustainable transportation initiatives.

Interactive Sustainability Kiosk

An interactive sustainability kiosk installed at the Exam Centre at the University of Toronto educates the university community about the numerous initiatives that have occurred at the university since 1973, and encourages students, faculty and staff to engage as well.



Nipissing University – Ecovillage

Nipissing University engaged its students in the development of an Ecovillage, where two of the existing townhouse residences were retrofitted to measure energy consumption with newly installed energy-efficient devices, resulting in a reduction of energy and water usage.

McMaster University – Sustainability Internship Program

Students at McMaster University apply knowledge gained in their academic courses towards sustainability efforts on campus through the Sustainability Internship Program. Civil Engineering students studied the effects of permeable paving by implementing a pilot project on McMaster's main campus. Arts and Science students mapped energy and waste usage at campus libraries and made recommendations to the university on how to achieve reductions.

University of Windsor – Campus-Wide Sustainability Survey

The University of Windsor undertook a campus-wide sustainability survey of its students to understand how best to direct their efforts, the results of which will help shape the campus' sustainability efforts going forward.

Queen's University – Student-Run Programs Driving Sustainability

The Alma Mater Society Sustainability Action Fund creates a funding source for sustainability-focused student projects and is supported by a student fee. During the fund's first year of operation in 2010/2011, it supported four projects, including the development of an active transportation website, support for a Commerce and Engineering Environmental conference, distribution of reusable water bottles to all first-year students and support for an environmental club to attend a sustainability conference in Washington, D.C. In addition, the Youth Mentoring program places 20 volunteer university students with approximately 500 elementary and high school students to mentor them on issues of sustainability, including energy, food, transportation, waste and water.

Laurentian University – Engaged Students

At Laurentian University students participated in a tree-planting initiative on campus, and Science Communication graduate students prepared guides to environmental features of the university's recent LEED buildings that are being used for classes, public audiences and on the university's website.

Of the Ontario university campuses that responded to the survey:

- 52.4 per cent conduct a campus-wide environmental or sustainability assessment report; an improvement from 40 per cent of the 2010 respondents;
- 42.9 per cent have a dedicated budget for green initiatives, compared with 30 per cent in 2010;
- 85.7 per cent track any costs/savings resulting from green initiatives, compared with 70 per cent in 2010;
- 76.2 per cent have (a) dedicated employee(s) for leading green initiatives, an improvement from 2010 when 70 per cent of campuses had such an initiative; and
- 81 per cent have a multi-stakeholder group focused on addressing green issues.

Since last year, the value of student input to sustainability efforts has increased from 65 per cent to 81 per cent.



> Emissions and Energy Use

Measuring emissions and energy use provides universities with a sense of a starting point, from which they can then set achievable targets for future reductions. Renewable energy is generated by 71 per cent of Ontario university campuses, with solar electric energy being the most common type. Campuses also purchase energy or renewable energy credits from off-campus renewable sources, such as Bullfrog Power, which supplies green electricity or green natural gas into the energy system to match the amount of electricity or natural gas used by the university.¹ Generating renewable energy on campus, and purchasing or supporting it off-site, demonstrates the extent to which Ontario universities are committed to reducing their traditional uses of energy and embracing green renewable options.

81 per cent of university campuses indicated that their campus has completed a greenhouse gas or carbon dioxide emissions inventory.

The number of university campuses that regularly set and review targets for reducing greenhouse gas and carbon dioxide emissions nearly doubled in 2011 from 2010.



The following are only a few examples of initiatives that campuses engage in to reduce emissions and energy use:

Wilfrid Laurier University – Energy Management Plan

Information from sub-meters, used to capture electricity usage in all of Laurier’s buildings, is automatically transferred into an energy management system that tracks greenhouse gas emissions. This benchmark information allows the university to accurately measure the impact of the energy savings initiatives outlined in Laurier’s Energy Management Plan, on both an operational and educational front.

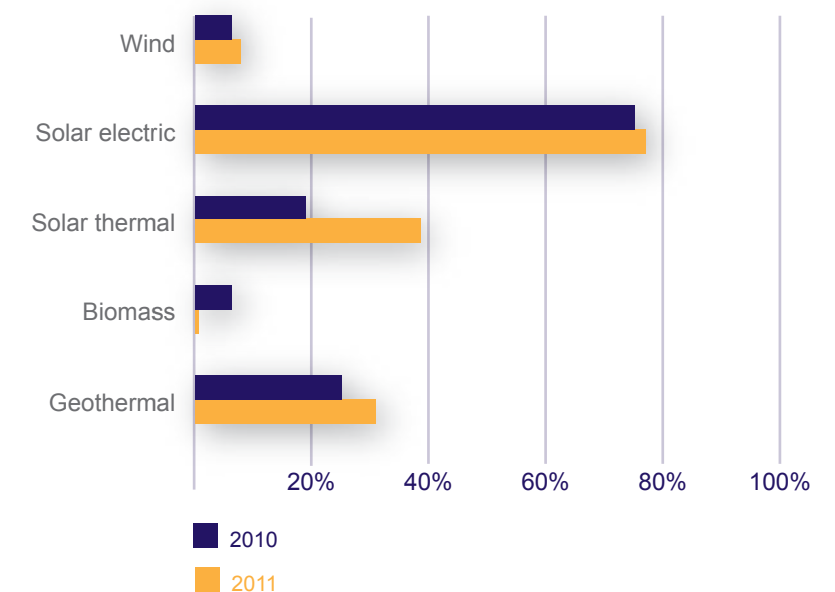
Solar Power

McMaster University’s initial pilot of a solar thermal roofing system proved to be so successful that the university expanded the project to include a similar system on the roof

of its Ivor Wynne Centre, an older section of the Athletic Centre. The system contributes between 40 and 60 per cent of the total energy required to heat the centre’s pool. McMaster anticipates a 10-year payback, with annual savings in excess of \$10,000. Other universities are recognizing and engaging in the benefits of solar power, including:

- Carleton University;
- Lakehead University;
- Nipissing University;
- OCAD University;
- Queen’s University;
- Ryerson University;
- University of Toronto – St. George Campus;
- University of Toronto – Mississauga Campus;
- University of Toronto – Scarborough Campus;
- University of Waterloo;
- The University of Western Ontario;
- Wilfrid Laurier University; and
- York University.

Comparison of on-site renewable energy produced by universities in 2010 and 2011



> Green Buildings

Ontario universities are taking active steps to introduce or improve green standards for existing and new buildings. Approximately $\frac{3}{4}$ of university campuses are implementing green roofs (i.e. roofs planted with vegetation) or cool roofs on their buildings. Consistent with practices in 2010, 71 per cent of campuses measure their indoor air quality.

Universities have engaged in a variety of upgrades to heating, ventilation and air-conditioning (HVAC), efficiency improvements and lighting replacement since 2010. These upgrades can help reduce energy consumption in new and existing buildings.



Universities have made efforts to conserve energy and reduce waste on their campuses; some examples include:

University of Toronto – St. George Campus – Building Upgrades and Retrofitting

University of Toronto's St. George campus is working towards retrofitting and expanding, and anticipates LEED certification for the Mining Building, School of Global Affairs (Munk Building) and the Rotman School of Management.

University of Toronto – Mississauga Campus

The Instructional Centre includes a 22kW solar photovoltaic system and the building is heated and cooled by a ground source heat pump system, which is expected to greatly reduce the amount of energy used.

University of Ottawa

University of Ottawa's energy conservation initiatives, which began in 1974, have helped the university reduce costs by nearly \$15 million; a third of what they would have been otherwise.

Lighting Upgrades

The University of Toronto's St. George campus updated lighting fixtures and systems, including occupancy sensors and control timer upgrades in their buildings. These improvements resulted in an annual electrical energy saving of 1,275,447 kWh in 2010. A number of other universities have upgraded lighting systems to be more efficient, resulting in energy conservation and, in some cases, a reduction in cooling demand. This includes:

- Brock University;
- University of Guelph;
- Lakehead University;
- Nipissing University;
- OCAD University;
- University of Ontario Institute of Technology;
- University of Ottawa;
- Queen's University;
- Ryerson University;
- University of Toronto – Scarborough Campus;
- University of Waterloo;
- The University of Western Ontario;
- Wilfrid Laurier University;
- University of Windsor; and
- York University.



100 per cent of university campuses collect paper, cardboard, glass and plastic for recycling. University campuses have increased the types of items they recycle when compared with 2010.

90 per cent of Ontario university campuses are implementing green standards for new buildings or retrofitting old buildings.

> Waste Management

Universities are making concerted efforts to reduce and manage the amount of waste generated on their campuses. Ninety-five per cent of campuses conduct studies or audits to determine how much and what type of waste is produced, and 52 per cent of campuses regularly set and review targets for reducing waste.

An area of particular improvement centres on the disposal of motor oils and grease/frying oils, with many more campuses taking care to recycle and/or dispose of these oils in a specialized manner. Recycling motor oil can have a significant impact on the environment, as it saves energy. In fact, two gallons of recycled oil have the potential to generate enough electricity to run an average household for approximately 24 hours. The motor oil that is taken to a collection centre can be reprocessed and used in furnaces for heat or in power plants to generate electricity.²

Examples of initiatives undertaken at universities to further reduce waste include:

Waste Day

The University of Western Ontario introduced a “waste day”, strategically held before the winter and summer holidays, so that students can properly dispose of electronics before they leave campus. Similarly, OCAD University hosts a Green Exchange event and has diverted 25,000 lbs of electronic waste from landfills, through repurposing or recycling end-of-life technology. Other universities that have similar initiatives include:

- McMaster University;
- Queen’s University;
- Ryerson University;
- University of Toronto – St. George Campus;
- University of Waterloo;
- Wilfrid Laurier University; and
- York University.

Ryerson University introduced a battery-recycling program and a food-composting program on campus.

The University of Ottawa introduced industrial composting to divert waste from landfills.



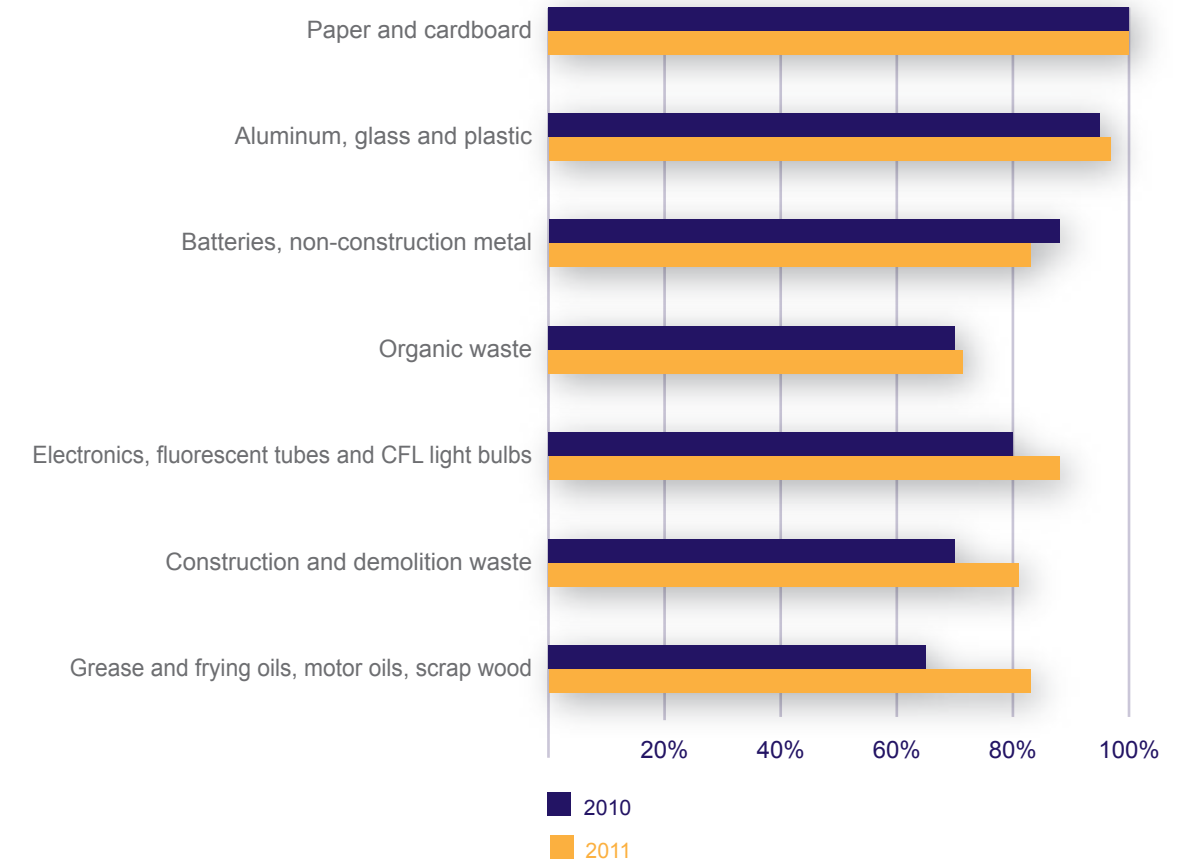
In an effort to reduce waste, universities have adopted the following approaches:

- McMaster has focused on reducing waste at the source and providing the opportunity to recycle more types of items, resulting in a 45 per cent reduction in total amount of waste generated compared to 2009.
- University of Toronto's Mississauga campus introduced 3-D signs in their cafeteria, illustrating what ought to be placed in the recycling bins, resulting in a decrease in contamination rates in the bins.
- OCAD University and Wilfrid Laurier University implemented new waste disposal and recycling bin systems for their departments; students at OCAD now use recycled materials as part of art projects, and Laurier has seen a 40 per cent increase in recycling.

- University of Ottawa introduced industrial composting to divert waste from landfills.
- Trent University is introducing compostable cups at events held in their pubs.
- University of Windsor conducts a waste audit every year and invites students to participate and identify ways of reducing waste.



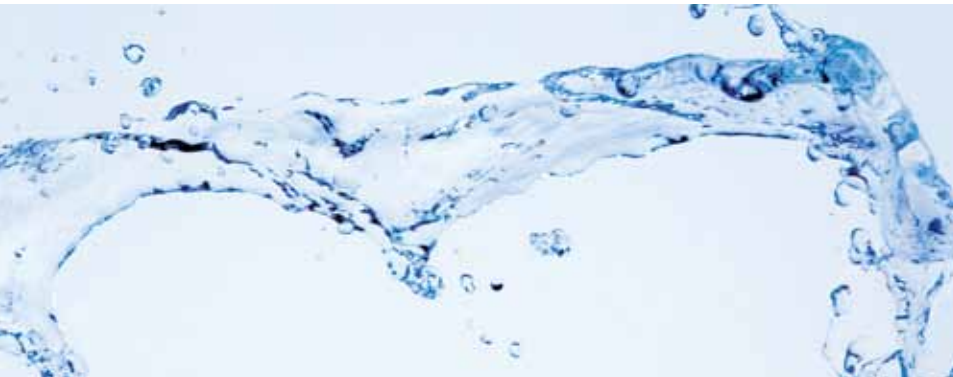
Recycled items in 2010 and 2011



> Water Management

Excessive consumption of water is expensive and environmentally irresponsible. Ontario university campuses are aware of the costs associated with poor management of water consumption, and are taking steps to monitor consumption and implement appropriate upgrades to reduce water usage on campus.

This year, 86 per cent of Ontario university campuses are monitoring water consumption, 24 per cent regularly set and review targets for reducing water consumption and 33 per cent report they have plans to begin establishing targets.



95 per cent of Ontario university campuses have installed low-flow toilets and 100 per cent have installed low-flow faucets.



Examples of a few innovative initiatives to conserve water include:

York University – Landscaping Water Initiatives

York University continues to practice effective landscape maintenance and storm water management in conjunction with campus improvements. Sustainable practices include limited plant watering and/or landscaping with plants that require minimal watering; using mulch in planted areas for water retention and weed control; and using porous, hard surface materials, so as to improve storm water infiltration in the soil.

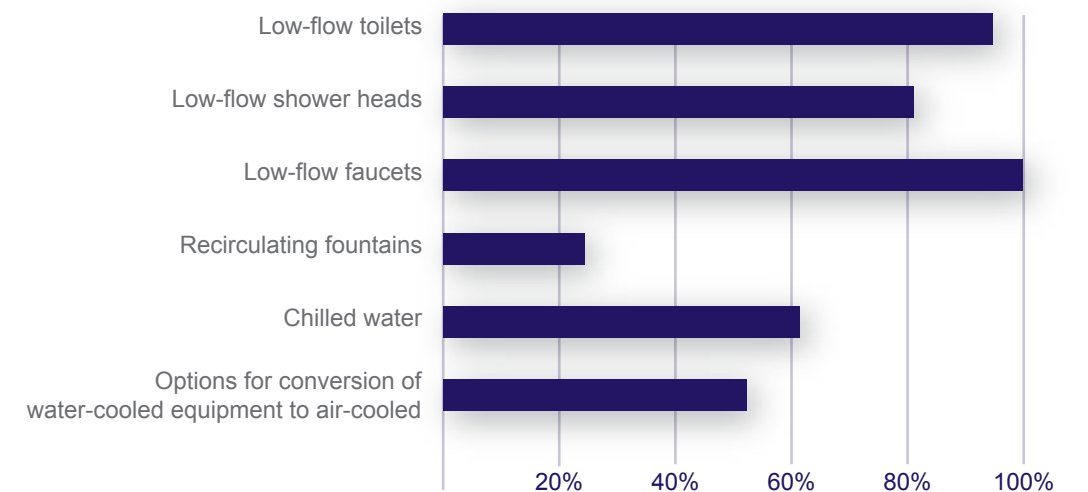
Wilfrid Laurier University – Water Cisterns for Ground Maintenance

The university has begun capturing rainwater through barrels and plans to use water cisterns in the future for grounds maintenance. This will result in a saving of 16,000 gallons of water each year for ground maintenance.

Many universities have taken steps to eliminate bottled water on campus, including:

- Brock University;
- McMaster University;
- OCAD University;
- Queen's University;
- Ryerson University;
- University of Toronto – St. George campus;
- University of Toronto – Mississauga campus;
- University of Toronto – Scarborough campus;
- Trent University;
- Wilfrid Laurier University; and
- York University.

Water efficiency updates on campus



> Green Transportation

Ontario university campuses are also improving and reducing emissions related to transportation of students and fleet management. Over half of university campuses monitor fuel use and set fuel reduction goals, which includes decommissioning low-efficiency vehicles. Campuses are promoting alternative methods of transportation, such as bicycles, by offering more bicycle lanes, and adequate and protected bicycle racks. Car or van-pooling is also encouraged by 67 per cent of campuses, and bike and car sharing programs are promoted by 52 per cent of campuses.



Almost all university campuses offer free or discounted transit passes to students and 48 per cent offer them to faculty and staff.

The following are a few initiatives that universities have adopted to improve and reduce emissions related to transportation:

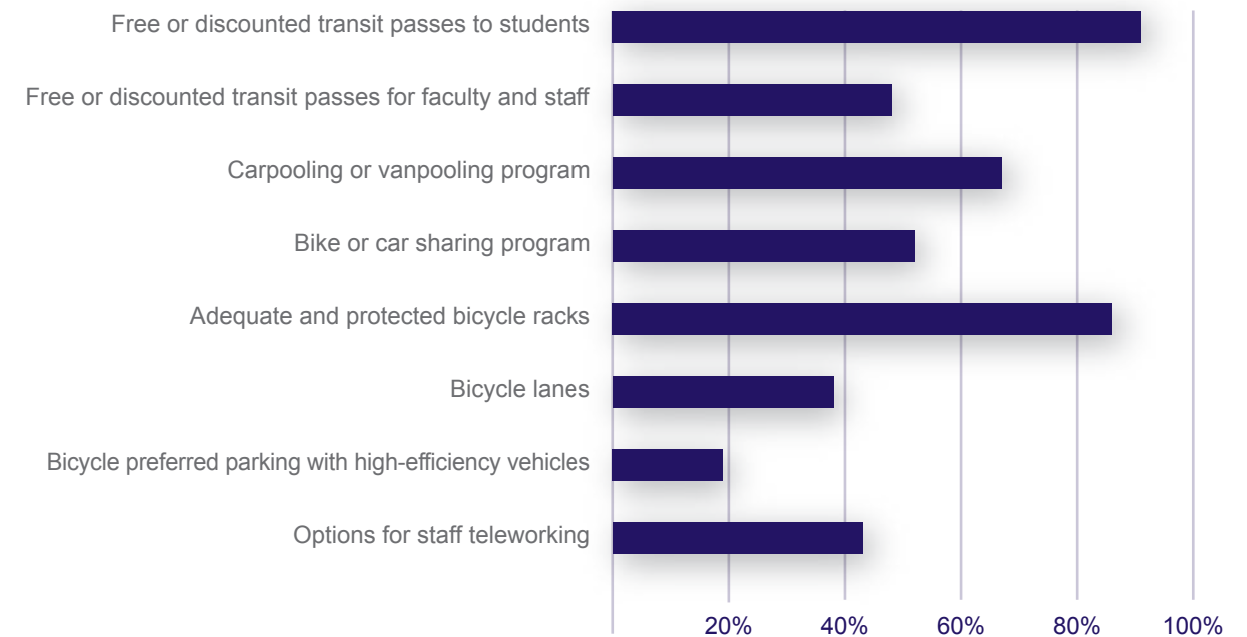
Queen's University – Electric Vehicles

Queen's University is currently testing and evaluating an electric vehicle for use on campus. It is anticipated that replacing just one existing fleet vehicle with an electric vehicle could reduce greenhouse gas emissions by as much as 4 tonnes of carbon dioxide emissions per year, and offer a reduction in fuel expenses of about 80 per cent.

York University – Reducing Transportation Emissions

York University has collaborated with the Toronto-York Spadina Subway Extension to extend the TTC Spadina subway line through the campus. In addition, it has engaged community members, as well as faculty, staff and students, through offering an Eco-Driver and E-Driver training workshop this year. These programs taught fuel-efficient driving, how to buy a fuel-efficient car and drive less to reduce fuel consumption and carbon dioxide emissions. The program also examined new technologies from a broad range of manufacturers and is beneficial for fleet managers as York looks at vehicle replacement in the future.

Initiatives since 2010 to reduce transportation emissions at Ontario universities



> Purchasing and Procurement

University campuses are extending the impact of their green commitment by requiring green practices from their vendors. Many campuses have included green requirements in the purchasing criteria for products, thereby creating environmental benefits that extend well beyond the university sector. These criteria include requirements that products must: contain recycled content, be energy efficient, come from sustainably managed sources, come from local sources, be fair trade, be sweat-shop free and contain no toxic materials.

A few examples of how university campuses have extended the impact of their green commitment to their vendors include:

Ryerson University – Green Purchasing Policy

Ryerson University is developing a new green purchasing policy that will allow vendors to be assessed based on environmental impact, as well as the best combination of cost, quality and performance. Other universities that are engaging in similar green procurement policies include:

- Brock University;
- Carleton University;
- University of Guelph;
- McMaster University;
- OCAD University;
- University of Ontario Institute of Technology;
- Queen's University;
- University of Toronto – St. George Campus;
- Trent University;
- University of Waterloo;
- The University of Western Ontario;
- University of Windsor; and
- York University.

Universities Sourcing Locally

Ontario universities are also committed to sourcing food and supplies locally. In fact, the University of Toronto's St. George campus is one of the first institutions to be certified by Local Food Plus (LFP), a non-profit organization that connects local and sustainable farmers with institutions. Other universities that are sourcing locally include:

- Brock University;
- Carleton University;
- University of Guelph;
- Laurentian University;
- McMaster University;
- Nipissing University;
- University of Ottawa;
- Queen's University;
- Ryerson University;
- University of Toronto – Mississauga Campus;
- University of Toronto – Scarborough Campus;
- Trent University;
- University of Waterloo;
- The University of Western Ontario;
- Wilfrid Laurier University; and
- York University.



> Teaching and Learning

University campuses are offering a number of degree options with a focus on environmental sustainability. The offerings include undergraduate majors and minors, master's level degrees and doctoral programs. An overwhelming number of university campuses offer courses related to environmental sustainability in a number of departments that are not traditionally linked to the environment, such as business, history and mathematics. Environmental issues are permeating a wide variety of disciplines, ensuring that regardless of the degree that students are pursuing, they will graduate with a better understanding of environmental issues. Ontario universities are also going beyond traditional classroom learning, by organizing and hosting conferences and education series on sustainability issues.

In addition to the exciting and innovative new courses and degree programs related to environmental sustainability in 2011, university campuses have introduced related new research institutes and major research projects as well.



Examples of some of the new research institutes and research projects at universities include:

Brock University – Cool Climate Oenology and Viticulture Institute

One of the research initiatives being undertaken at Brock University is examining how climate change will affect the grape and wine industry.

Carleton University – Sustainable Energy Research Centre

Carleton University has established a Sustainable Energy Research Centre that will conduct world-class research into sustainable energy. The centre will focus on innovative ways to reduce energy consumption, explore emerging renewable energy sources, such as wind, solar and biofuels, and examine strategies for using traditional, non-renewable sources effectively and responsibly.



York University – Climate Consortium for Research Action and Integration

The Climate Consortium for Research Action and Integration was founded in 2008 by York University and the Toronto Region Conservation Authority to accelerate regional action on climate change. The consortium's current focus is on the Greater Golden Horseshoe and Great Lakes region, where they are generating regionally relevant research and taking local action to address broader Canadian and global climate concerns.

Wilfrid Laurier University – Centre for Community Research, Learning and Action

This centre is compiling a network database of local environmental organizations and initiatives. This is done to facilitate collaboration and provide a "green book" of resources that benefits both the Laurier and local community, by raising awareness and improving networks.

Research Centres

Other university centres recently established include:

- University of Waterloo: Waterloo Summit Centre for the Environment;
- Brock University: Brock Environmental Sustainability Research Unit;
- University of Ontario Institute of Technology: Clean Energy Research Laboratory;
- OCAD University: ZERO Lab, dedicated to developing new applications, tools, visualizations and methodologies, in order to reduce human impact on the environment by reducing our carbon footprint;
- York University: Institute for Research and Innovation in Sustainability.

University of Windsor – Innovative Training and Solutions

Centre for Hybrid Automotive Research and Green Energy

The centre is equipped with one of the best electric motor test facilities in North America. The centre is introducing innovative component shapes and designs, and strategies to improve efficiency, cost and NVH (noise, vibration and harshness) in new cars. In addition to these innovative projects, the centre is also engaged in testing the Toyota Prius Plug-in Hybrid to gather critical data on its electric vehicle and hybrid system performance.

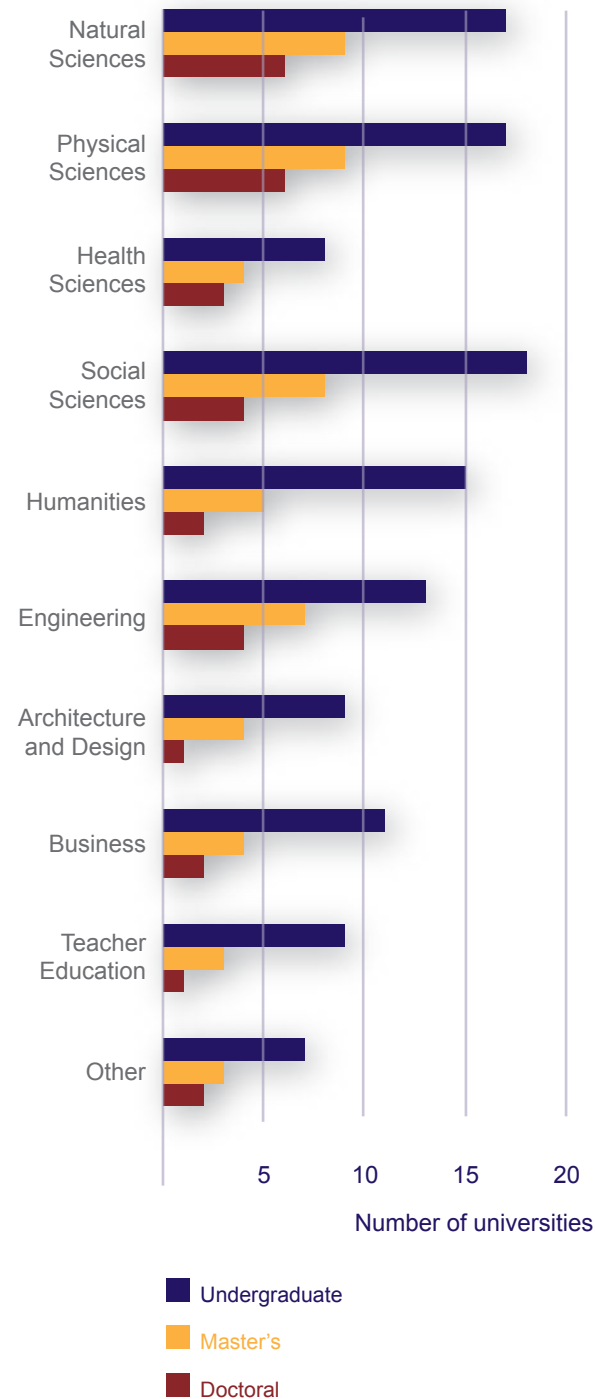
Great Lakes Institute for Environmental Research

Over the next six years, over 50 students will be equipped with the tools necessary to one day develop ways of preserving freshwater resources for both humans and animals. Students will be trained on environmental stressors, such as metal contaminants, the decline of calcium and invasive species that threaten our sources of fresh water, as well as the diverse range of organisms they support.

University of Toronto – St. George Campus – The BioZone

The BioZone is the University of Toronto's new engineering research institute, with a mandate to engage in research in applied bioscience and bioengineering, and to provide technological innovation in energy, environment and health. One of the institute's projects, "Distributed Generation for Remote Communities", will help bring clean energy alternatives to largely inaccessible Canadian locations. Specifically, it will provide cleaner options to 150 remote Aboriginal communities that rely on diesel generators, and also equip the University of Toronto's graduate students with experience in the renewable energy sector.

Departments offering courses on environmental sustainability



Ryerson University – Ryerson Centre for Urban Energy

The Ryerson Centre for Urban Energy (CUE) was launched with support from its founding sponsors: Hydro One, Ontario Power Authority and Toronto Hydro. Through academic, public and private-sector collaborations, CUE researchers develop and commercialize innovative solutions to urban energy issues (e.g. from ways of improving the energy efficiency of buildings, to strategies for motivating consumers and businesses to be more energy efficient). CUE recently signed a partnership agreement with Anna University in Chennai, India. The Anna University–Ryerson University Centre for Urban Energy partnership will look at alternative local energy production, such as finding ways in which city buildings can capture and use solar energy instead of relying on traditional electric grids.

Lakehead University – New Research Institutes

The Biorefining Research Initiative will create a centre to develop new transformative technologies and consider economic benefits derived from the forest ecosystem. This is done through biorefinery processes that create products from renewable forest biomass resources, reduce dependence on fossil fuels and mitigate greenhouse gas emissions. The Centre for Tourism and Community Development Research identifies and develops regional, national and international partnerships that contribute to implementing social, environmental and economic sustainability in small communities.



> Partnerships

Ontario universities are committed to continue developing green initiatives on their campuses, by engaging students, faculty, developing research institutions, programs and engaging with the local community. Since 2010, university campuses have also engaged in partnerships with Broader Public Sector organizations, businesses, student organizations, local community organizations and the government, to promote environmental sustainability. This has led to a broader awareness of environmental concerns, a positive impact on the environment and creative solutions developed to further enhance environmental sustainability.



Examples of partnerships that universities have engaged in to further reduce negative environmental impacts include:

Wilfrid Laurier University

Since March 2010, Wilfrid Laurier University has been a member of Sustainable Waterloo, a local not-for-profit that helps organizations set and reduce greenhouse gas emissions, and provides workshops and events.

University of Guelph

The university has partnered with the City of Guelph to make substantial improvements to the transit routes and establish intercity connections.

Queen's University – Collaborating for Innovative Results

Open Solar Outdoors Test Field

Queen's University has undertaken a number of innovative and collaborative projects recently. The Open Solar Outdoors Test Field (OSOTF) was originally developed with a partnership between the Applied Sustainability Research Group at Queen's University and the Sustainable Energy Applied Research Centre at St. Lawrence College. The OSOTF is a solar panel testing system that measures the energy output of 95 different types of solar panels, while considering weather conditions at the time. This data will allow individuals to find out how local weather conditions will impact the solar panels that they install, and which type of solar panels will be the most efficient in a particular environment.

Green Centre Canada

This centre brings together academic researchers and industry partners with a common goal of developing clean, less energy-intensive alternatives to traditional chemical products and manufacturing processes.

Solar Buildings Research Network

The Solar Buildings Research Network was created to develop solar-optimized homes and commercial buildings of the future. The network consists of 24 Canadian researchers from 10 universities. Member universities from Ontario include Carleton University, McMaster University, University of Toronto, Ryerson University, The University of Western Ontario, University of Waterloo and Queen's University.³ Researchers at Queen's are working on a project to develop systems specifically for Canadian conditions that include solar air-conditioning and solar heat pumps for combined heating, cooling and hot water production.



Ryerson University – Farmers’ Market on Gould Street

Gould Street, which is now a pedestrian walkway in the middle of the campus, is home to a farmers’ market in partnership with MyMarket®, Canada’s first certified farmer’s market provider, featuring verified local farmers that sell only what they produce. Furthermore, in collaboration with the Food Security Students’ Group, there are three urban vegetable gardens across campus, whose crops are being donated to the Ryerson Student Food Bank.

University of Ontario Institute of Technology – Partnerships

The University of Ontario Institute of Technology has established a number of partnerships with the Broader Public Sector and other organizations to promote environmental sustainability, including Gerdau Ameristeel, Durham Region, Marnoch Thermal Power and Atomic Energy Canada Limited.

University of Waterloo

The University of Waterloo and St. Paul’s University College partnered with the Region of Waterloo to divert approximately 936 gallons of waste per week from Watson Eatery cafeteria through the green bin program.



List of Participating Institutions

Brock University
Carleton University
University of Guelph
Lakehead University
Laurentian University
McMaster University
Nipissing University
OCAD University
University of Ontario Institute of Technology
University of Ottawa
Queen’s University
Ryerson University
University of Toronto – St. George Campus
University of Toronto – Mississauga Campus
University of Toronto – Scarborough Campus
Trent University
University of Waterloo
The University of Western Ontario
Wilfrid Laurier University
University of Windsor
York University

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¹“Bullfrog Power”, <http://www.bullfrogpower.com/about/about.cfm>, accessed on September 26, 2011.

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³Solar Buildings Research Network, “The Network”, <http://www.solarbuildings.ca/main.php?i=13&t=mainpages&d=1&l=e> accessed on October 6, 2011.

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