

POLICY PAPER

Environmental Sustainability

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Introduction

McMaster University, one of four Canadian universities listed among the Top 100 universities in the world, is renowned for its innovation in both learning and discovery. Fundamental to its role as an innovator is its adoption of environmentally- sustainable practices. While the University has demonstrated a commitment to environmental sustainability, there are further steps the University can take to secure McMaster's spot as a leading innovator both in and outside of the classroom.

The first section of the policy addresses environmental sustainability issues related to food on campus and waste. There is a high volume of waste produced on campus, much of which is related to food. Through the implementation of sustainable waste management strategies such as incentivizing reusable utensils and introducing portion sizing for campus food, there can be an effective reduction in such waste. More awareness regarding composting practices and electronic waste disposal, accompanied by more convenient access to disposal, will also serve to promote more sustainable waste management.

The next section discusses energy, focusing specifically on sustainable energy practices and steps towards further energy conservation. Aspiring towards a green energy campus, the University should consider fossil fuel divestment, LED and sensor lights wherever possible, in addition to other sustainable energy sources. Strategies such as reducing any nonessential usage of energy on campus and a deep energy retrofit will also successfully reduce utility costs expended on energy usage.

Next, the policy puts forth recommended means to reduce the University's carbon footprint, outlining various concerns around greenhouse gas and carbon dioxide emission as well as paper usage. A discussion on the topic of water follows, with recommended strategies for eliminating the usage of single-use water bottles and reducing the University's water consumption.

Finally, the policy closes with recommendations for greater accountability to sustainable goals and more innovation in sustainable practices. The University is urged to improve its transparency regarding water and waste management and energy usage; increase its efforts in educating students in sustainable practices; keep its sustainability policies up to date and include more student consultation; and expand its sustainability initiatives while promoting greater interconnectedness across different University bodies with environmental sustainability causes.

By addressing these specific components of the University's environmental sustainability, McMaster can establish itself to not only be a leader as an academic institution but also a leader in sustainable development as well. The MSU would like to call on university policy makers and relevant stakeholders to tackle these student concerns at a system level, improving the student experience, contributing to a global conversation on sustainable development, and taking a right step forward in creating a brighter world.

Waste Management

Food-related Waste Management

Principle: All members of the university community have a responsibility to reduce the production of all forms of waste.

Principle: McMaster University should aspire towards developing and implementing sustainable food-related waste management and reduction strategies.

Principle: Food-related sustainability practices are an important component of sustainable development.

Concern: A high volume of waste is produced on-campus, and a significant proportion of this waste is neither recyclable nor biodegradable.

Concern: Students are unaware of existing discount programs for when they purchase goods using reusable containers.

Recommendation: In line with recent decisions by the Campus Store, The University should implement a ban for single-use plastic products, and replace them with compostable products.

Recommendation: Food vendors should implement and explicitly advertise discounts for students who bring their own food and beverage containers.

Recommendation: Hospitality Services should increase promotional efforts regarding the Eco-Takeout Container Program and the Bring Your Own Mug initiative.

Recommendation: All McMaster-affiliated groups and events organized on McMaster property should adhere to the Waste-Free Event Guidelines.

Recommendation: Hospitality Services should expand the Choose To Reuse program to more locations on campus.

Recommendation: Housing and Conference Services should commit to implementing the three-stream waste system into all residences on campus.

Recommendation: Hospitality Services should introduce more portion size options (ex. Small, medium, and large) by providing customers with the option of using smaller containers or receiving a reduced portion while adjusting for costs.

Solid Waste Management: Recycling and Composting

Principle: Sustainable solid waste management strategies that promote correct recycling and composting practices are an essential component to sustainability.

Concern: Only 9% of recyclable plastic products are recycled, with the remainder being incinerated, being thrown in garbage, or remaining as litter in the community.

Concern: Most recycling that is thrown into the correct disposal container is sent to landfills or incinerated as it is either too expensive to sort the recycling, or it is found to be less expensive for the recyclable goods to be disposed of to allow new products to be made from raw materials.

Concern: A large portion of waste is shipped outside of Canada to be recycled. This not only adds to greenhouse gas emissions due to shipping, but also results in most of the recyclable material being incinerated when it reaches its destination as production of new products is less expensive.

Concern: McMaster does not have any clear information on where all of McMaster's waste is shipped to or how most of it is dealt with.

Concern: There are not enough designated compost disposal bins available on campus.

Recommendation: Facility Services should ensure all bins for composting, recycling, and garbage should be located in close proximity to limit incorrect waste disposal.

Recommendation: Facility Services should design waste bins to aid correct disposal and keep the design consistent across all campus buildings to minimize confusion.

Recommendation: Facility Services should implement clear signage above waste collection bins to inform individuals and encourage them to practice correct disposal.

Recommendation: Facility Services should implement compost bins at more locations on campus.

Recommendation: Facility Services should clear compost bins.

Recommendation: The university should communicate more clear, verifiable information about where McMaster waste is sent, how it is dealt with, and what proportion of it is actually recycled or composted properly.

Recommendation: The University should commit to implementing and advertising a year-round recycling program which incentivizes students to recycle

Electronic Waste (E-Waste) Management

Principle: Students should be equipped with the knowledge and means of safely disposing their electronic devices.

Principle: All members and bodies of the University should play an active role in effectively managing e-waste.

Concern: Due to a lack of knowledge and convenient disposal locations, students incorrectly dispose of e-waste.

Concern: There are currently no plans for the New IT Disposal System to remain intact following the completion of its pilot stage.

Concern: Without proper systems in place, students rarely have the opportunity to dispose of their e-waste in a socially responsible manner.

Recommendation: McMaster University should inform students of appropriate e-waste disposal practices.

Recommendation: McMaster University should establish accessible drop-off locations for e-waste disposal across campus.

Recommendation: McMaster University should ensure that the New IT Disposal System remains intact following the end of its pilot stage.

Recommendation: The New IT Disposal System should receive the financial or capital assistance it requires to begin accepting and transforming more types of e-waste.

Concerted Collection Efforts

Principle: Reusing and repurposing materials is necessary to reduce waste production.

Concern: During periods such as move-out, massive tons of waste is produced.

Concern: Residence Life staff are not trained in how to manage waste during move-in and move-out.

Recommendation: McMaster University should offer specialized waste management services during move-out periods that incentivize reusing and repurposing materials.

Recommendation: Residence Life should ensure that waste management training is incorporated into the basic training provided to all Residence Life staff.

Food Literacy

Principle: Food-related sustainability practices are an important component of sustainable development.

Concern: Many students have limited experience in food literacy, which encompasses the knowledge and skills related to the nutritional, health, environmental, and economic impact of food decisions.

Concern: Currently, food received from some vendors goes to waste.

Recommendation: McMaster University should provide more accessible resources for food literacy.

Recommendation: Hospitality Services should introduce portion sizes options by providing customers with the option of using smaller containers or receiving a reduced portion while adjusting for costs.

Energy and Greenhouse Gases (GHGs)

Energy Consumption

Principle: McMaster University should strive to limit its energy consumption.

Principle: Energy conservation efforts should not detract significantly from McMaster University's quality of education and student, faculty, and administrative life.

Concern: Many buildings are outfitted with outdated and inefficient lighting and heating technology that wastes more energy than newer and more efficient options.

Concern: After evening classes have been completed, the lights in some buildings remain on throughout the duration of the night, increasing energy consumption.

Concern: The temperature in some buildings fluctuates to an uncomfortable degree, wasting energy used on heating or air conditioning.

Concern: Some residence styles feature multiple air conditioning systems per unit, which are capable of being turned on with competing purposes simultaneously,. needlessly wasting energy.

Concern: Electronic devices and appliances remain plugged in throughout campus when not in use, contributing to the “phantom load.”

Recommendation: McMaster University should remove energy use, such as heating and lighting, when campus buildings are not in use.

Recommendation: McMaster University should continue to retrofit buildings, whenever possible, with LED lights or other energy-efficient options.

Recommendation: McMaster University should install sensor lights in buildings wherever possible in order to avoid the unnecessary usage of energy via lighting and heating.

Recommendation: McMaster University should reduce unnecessary usage of energy on temperature control in campus buildings through installing smart thermostats that regulate temperature based on necessity

Recommendation: McMaster University should aim to transition to smart power grids which automatically shut off power supply to devices on standby during overnight, weekend and holiday times.

Recommendation: Residence styles with multiple air conditioning units should be augmented to ensure that two units cannot work against one another simultaneously.

Sustainable Energy and Technology

Principle: Sustainable energy practices are crucial to a sustainability-friendly campus.

Principle: LED lighting is more efficient and cost effective and McMaster should continue to adopt its usage on campus.

Principle: Smart thermostats and other energy-regulating technology is critical to lowering McMaster University energy costs and transitioning towards a sustainable campus.

Concern: Currently the University relies heavily on fossil fuels for many of its energy needs, which is not a sustainable means of powering the University's operations.

Concern: McMaster continues to use less-than-optimally-sustainable lighting technology, which is old, costly, and environmentally unsustainable.

Concern: A significant amount of McMaster's endowment fund - \$35.96 million - is currently invested in fossil fuel companies.

Concern: McMaster University has yet to commit to a detailed plan to reduce GHGs to the goals outlined in the Environment Sustainability Plan 2019.

Recommendation: McMaster University should divest from the use of fossil fuel through a transition to more sustainable energy sources.

Recommendation: McMaster University should replace regular light bulbs in its buildings with LED lights wherever possible.

Recommendation: McMaster should replace regular light bulbs in lamps and equipment used on campus to compact fluorescent lights (CFLs) wherever possible.

Recommendation: The \$35.96 million in the endowment fund (4.3%) that is locked up in fossil fuel companies should be divested and funneled towards investments in innovative, green technology.

Recommendation: McMaster should conduct deep energy retrofits in its buildings to identify specific areas to improve energy efficiency.

Recommendation: McMaster University should ensure that all new infrastructure on campus should adopt the most cutting-edge technology and innovative practices in green energy and sustainable energy.

Sustainable Transportation

Principle: Higher education institutions are looked to as leaders in promoting sustainable practices to address greenhouse gas emission.

Concern: While McMaster University current efforts are directed towards reducing emissions originating from powerplant and energy production, the university can also act to reduce emissions in smaller and mobile sources across campus.

Concern: The thousands of automobiles arriving on and driving through campus contribute to the University's greenhouse gas emissions.

Recommendation: McMaster's Climate Action Plan, like other universities, should set a target to be carbon neutral by 2040 in the interim set to reduce the carbon footprint by 35 percent by 2020 and 70 percent by 2030.

Recommendation: McMaster University should update and enforce a campus-wide no-idling policy.

Recommendation: Parking Services should establish discounts and other incentives to encourage carpooling.

Recommendation: Parking Services should look to expand preferential parking programs for Electric Vehicles, Low Emission Vehicles and Carpool Vehicles.

Recommendation: Facility Services should increase green spaces on campus.

Paper

Principle: Sustainable practices should be followed in the classroom.

Principle: McMaster University should prioritize the reduction of paper waste.

Concern: Many courses at McMaster currently rely on physical handouts and submissions, using unnecessary energy and creating waste in the campus environment.

Concern: Many courses at McMaster currently rely on physical custom courseware using unnecessary energy and creating waste in the campus environment.

Concern: Many course outlines in a variety of programs do not contain information related to the Sustainable Written Work Submission Guidelines or relevant McMaster sustainability policies.

Concern: Paper resources are not being utilized to their fullest extent (e.g. only being used for one side).

Recommendation: McMaster University should mandate that teaching staff, whenever possible, should accept student submissions for assignments using online tools such as Avenue to Learn or Crowd Mark.

Recommendation: McMaster University should mandate that custom courseware is made available in digital forms. O

Recommendation: McMaster's Sustainable Written Work Submission Guidelines should be included on every course outline and uploaded to the program's website for easy access.

Recommendation: McMaster should implement a Good On One Side (G.O.O.S) initiative to reduce the amount of paper waste produced.

Water

Single-use Water Bottles

Principle: Institutions have a responsibility to eliminate unnecessary waste.

Concern: A future dependent on plastic water bottles is unsustainable due to their production costs and significant detrimental impact to the environment and local communities.

Recommendation: McMaster University should be a water-bottle free campus, enforcing a water-bottle free policy and refraining from selling plastic water bottles.

Recommendation: Where possible, the university should retrofit water fountains with water bottle refill stations to improve their maintenance and efficiency.

Water Usage

Principle: When it does not detract from the quality of education and student, faculty, and administrative life, the University should conserve water whenever possible.

Concern: McMaster University consumed 300 000 m³-of water in 2017-2018, much more than other institutions of a similar size.

Recommendation: The University should develop a strategy to reduce water consumption in buildings through the creation of a Water Management Plan.

Recommendation: The University should promptly publish data related to water consumption to ensure that stakeholders can take appropriate action to reduce water usage on campus.

Transparency and Accountability

Principle: The energy usage, water management, and waste management on campus should be communicated clearly and transparently. McMaster University should be transparent about its energy consumption and waste management practices.

Principle: Students are other stakeholders in the well-functioning of the All members of the University and should have ease of easy access to information about the University's environmental practices.

Concern: Students have reported cases of unclean or discolored drinking water in various buildings across campus.

Concern: Students are not aware of the single-stream recycling programs taking place available on campus.

Concern: Students are not aware of matters regarding the institution's McMaster's total energy use.

Concern: Students are not aware of how the University is disposing of waste, recyclables, e-waste, and utilizing compostable materials.

Concern: Due to the lack of up-to-date information, McMaster University is unable to be held accountable for its waste management and energy consumption in accordance with current policies.

Recommendation: The University should inform students of water quality and work to actively maintain drinkable water across campus.

Recommendation: The University should inform students of their waste disposal methods, recycling programs, e-waste disposal, and composting initiatives on campus.

Recommendation: The University should inform students of their energy usage and the initiatives in place to decrease energy use campus-wide.

Recommendation: The University should use online (website, social media) and in person (posters, digital signage, signs on trash and waste disposal cans) means to educate the McMaster community. The University should use digital and physical means to educate the McMaster community about sustainability-related initiatives.

Recommendation: The University should centralize its sustainability-related reports its sustainability reports and data to ensure that sustainability-related information is easily accessible

Recommendation: The University should regularly update the sustainability website with news, reports, and other sustainability-related information.

Recommendation: The University should perform yearly biennial waste audits to determine waste composition, the success of current waste diversion programs, and to identify possible inefficiencies.

Education

Education

Principle: Sustainability education should begin when students arrive on campus and should continue throughout their time at McMaster

Concern: Some students do not know how to properly dispose of waste, recyclables, and compostable materials due to a lack of awareness, education and available resources.

Concern: Many McMaster students who live in student housing in the Hamilton community do not know how to properly dispose of wastes, recyclables, and compostable materials.

Concern: Students foreign to Hamilton and McMaster University's surrounding area may be unaware of the cleanliness of Hamilton's drinking water and, as a result, resort to plastic water bottles, reboiling tap water or using external water filters that are sources of waste. There is a misconception that Hamilton's drinking water is not safe to consume.

Recommendation: McMaster University should be proactive in educating students of proper waste, recyclable, and compostable material management throughout their entire time at the University.

Recommendation: The City of Hamilton should inform all residents, including students, of municipal tap water quality.

Policy Statement

Whereas: All members of the university community have a responsibility to reduce the production of all forms of waste.

And Whereas: McMaster University should aspire towards developing and implementing sustainable food-related waste management and reduction strategies.

And Whereas: Food-related sustainability practices are an important component of sustainable development.

And Whereas: A high volume of waste is produced on-campus, and a significant proportion of this waste is neither recyclable nor biodegradable. Thus, it is directed towards landfills.

And Whereas: Students are unaware of existing discount programs for when they purchase goods using reusable containers.

And Whereas: Sustainable solid waste management strategies that promote correct recycling and composting practices are an essential component to sustainability.

And Whereas: Only 9% of recyclable plastic products are recycled, with the remainder being incinerated, being thrown in garbage, or remaining as litter in the community.

And Whereas: Recyclable and compostable waste is not effectively diverted from the landfill, as students and staff do not practice correct waste separation.

And Whereas: Most recycling that is thrown into the correct disposal container is sent to landfills or incinerated as it is either too expensive to sort the recycling, or it is found to be less expensive for the recyclable goods to be disposed of to allow new products to be made from raw materials.

And Whereas: A large portion of waste is shipped outside of Canada to be recycled. This not only adds to greenhouse gas emissions due to shipping, but also results in most of the recyclable material being incinerated when it reaches its destination as production of new products is less expensive.

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And Whereas:: Due to a lack of knowledge and convenient disposal locations, students incorrectly dispose of e-waste.

And Whereas: There are currently no plans for the New IT Disposal System to remain intact following the completion of its pilot stage.

And Whereas: Without proper systems in place, students rarely have the opportunity to dispose of their e-waste in a socially responsible manner.

Principle: Reusing and re-purposing materials is necessary to reduce waste production.

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And Whereas: McMaster University consumed 300 000 500 000 m3 of water in 2017-2018, much more than other institutions of a similar size. 2015-2016.

And Whereas: Sustainability initiatives should reflect the unified interests of relevant all members of the University parties centered focused on sustainability.

And Whereas: Students should be provided with adequate opportunities and the resources to lead sustainability initiatives.

And Whereas: Currently, sustainability initiatives on campus are organized and implemented separately, thereby lacking cohesiveness and the potential for collaboration.

And Whereas: There are limited opportunities on campus for students to lead sustainability initiatives with the support of relevant University bodies.

And Whereas: The energy usage, water management, and waste management on campus should be communicated clearly and transparently. McMaster University should be transparent about its energy consumption and waste management practices.

And Whereas: Students are other stakeholders in the well-functioning of the All members of the University and should have ease of easy access to information about the University's environmental practices.

And Whereas: Students have reported cases of unclean or discolored drinking water in various buildings across campus.

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And Whereas: Due to the lack of up-to-date information, McMaster University is unable to be held accountable for its waste management and energy consumption in accordance with current policies.

And Whereas: Sustainability education should begin when students arrive on campus and should continue throughout their time at McMaster

And Whereas: Some students do not know how to properly dispose of waste, recyclables, and compostable materials due to a lack of awareness, education and available resources.

And Whereas: Many McMaster students who live in student housing in the Hamilton community do not know how to properly dispose of wastes, recyclables, and compostable materials.

And Whereas: Students foreign to Hamilton and McMaster University's surrounding area may be unaware of the cleanliness of Hamilton's drinking water and, as a result, resort to plastic water bottles, reboiling tap water or using external water filters that are sources of waste. There is a misconception that Hamilton's drinking water is not safe to consume.

Be It Resolved That: In line with recent decisions by the Campus Store, The University should implement a ban for single-use plastic products and replace them with compostable products.

Be It Further Resolved That Food vendors should implement and explicitly advertise discounts for students who bring their own food and beverage containers.

BIFRT: Hospitality Services should increase promotional efforts regarding the Eco-Takeout Container Program and the Bring Your Own Mug initiative.

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BIFRT: Where possible, the university should retrofit water fountains with water bottle refill stations to improve their maintenance and efficiency. .

BIFRT: The University should develop a strategy to reduce water consumption in buildings through the creation of a Water Management Plan.

The University should promptly publish data related to water consumption to ensure that stakeholders can take appropriate action to reduce water usage on campus.

BIFRT: McMaster University should coordinate a unified sustainability campaign to standardize sustainability practices among different facilities, including but not limited to Hospitality Services, University Facility Services, McMaster Student Union, OPIRG, and Hamilton Health Sciences

BIFRT: There should be a physical space on campus that acts as a central location or office for University parties' members focused on sustainability to meet.

BIFRT: The University parties members involved in curating sustainability-related initiatives should employ strategies that encourage cross-institutional engagement to identify important questions and pertinent issues.

BIFRT: The University should increase its funding of McMaster University's Sustainability Education Program and the Academic Sustainability Programs Office to allow for more undergraduate student participation in sustainability-related initiatives.

BIFRT: The University should inform students of water quality and work to actively maintain drinkable water across campus.

BIFRT: The University should inform students of their waste disposal methods, recycling programs, e-waste disposal, and composting initiatives on campus.

BIFRT: The University should inform students of their energy usage and the initiatives in place to decrease energy use campus wide.

BIFRT: The University should use online (website, social media) and in person (posters, digital signage, signs on trash and waste disposal cans) means to educate the McMaster community. The University should use digital and physical means to educate the McMaster community about sustainability-related initiatives.

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BIFRT: The University should regularly update the sustainability website with news, reports, and other sustainability-related information.

BIFRT: The University should perform yearly biennial waste audits to determine waste composition, the success of current waste diversion programs, and to identify possible inefficiencies.

BIFRT:: McMaster University should be proactive in educating students of proper waste, recyclable, and compostable material management throughout their entire time at the University.

BIFRT: The City of Hamilton should inform all residents, including students, of municipal tap water quality.