McMASTER UNIVERSITY

Sustainability Report

2021-22




BRIGHTER WORLD

McMaster University

Cover: Volunteers at a tree planting event at McMaster's Carbon Sink Forest on Earth Day in 2022.
Above:Syed Irfan, an undergraduate Life Sciences student, tree planting at McMaster's Carbon Sink Forest.

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LAND ACKNOWLEDGMENT

McMaster University recognizes and acknowledges that it is located on the traditional territories of the Mississauga and Haudenosaunee nations, and within the lands protected by the Dish With One Spoon wampum agreement.

President's Letter

Welcome to the second annual Sustainability Report. This report has been created in alignment with McMaster's inaugural, university-wide Sustainability Strategy: A Living Laboratory for Sustainability 2022-26. The strategy was created in collaboration with our community and aligns with our vision to advance human and societal health and well-being.

Transforming McMaster's campus into a living laboratory for sustainability is a university priority. Every year, McMaster is committed to sharing and celebrating our progress in all areas of sustainability. This report shares our progress over the last year within the four strategic drivers of our strategy: 1. A Culture Focused on Sustainability 2. Teaching, Learning and Research 3. Self-Sustaining Campus and Sites and 4. Operational Excellence. Sustainability at McMaster is guided by principles that look through a lens of Indigeneity, and focus on equity, diversity, accessibility, and inclusion.

I hope you enjoy reading about some of the recent progress in carbon reduction, energy and waste management. We continue to pursue the goal of being a carbon free campus.

It is clear that sustainability, in all its forms, matters to the McMaster community. This report includes a map of how every initiative is connected to McMaster's responsibility to address the United Nations' Sustainable Development Goals (UN SDGs) across disciplines, Faculties and units.

When it comes to sustainability, McMaster has collectively committed to collaborating across the university, listening to feedback and setting ambitious goals. More work is underway, more progress will be made, and we will continue to seek the collaboration of our students, faculty and staff along the way.

David Farrar
President and Vice-Chancellor

David Farrar, President and Vice-Chancellor at McMaster University.

Sustainability Strategy Drivers and Guiding Principles

McMaster's Sustainability Strategy: A Living Laboratory for Sustainability was developed through an engagement process with input provided by students, faculty and staff. Interwoven throughout the strategy's four drivers continues to be the principles guiding our campus' transformation into a living laboratory of sustainability.

GUIDING PRINCIPLES

We look through a lens of Indigeneity in our sustainability efforts

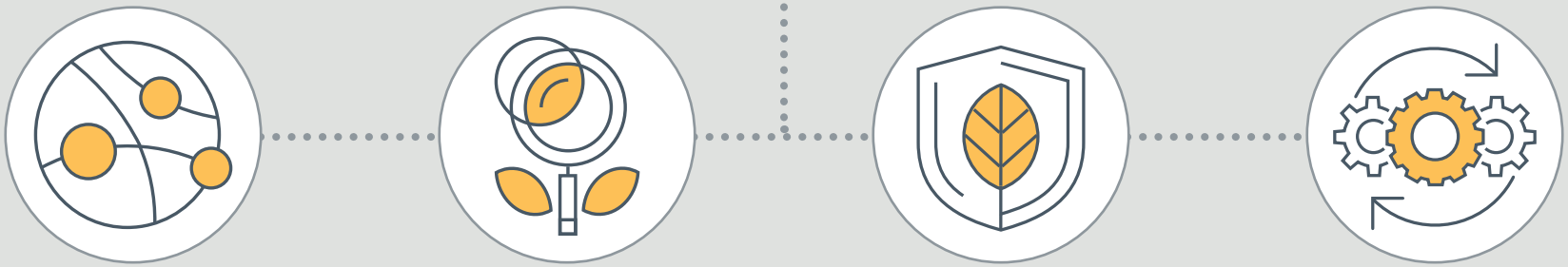
We focus on equity, diversity, accessibility, and inclusion in our sustainability efforts

We see sustainability work as a collaborative, evolving effort

We strive for innovative solutions tailored to our community

We share and recognize our sustainability progress and achievements across our community

SUSTAINABILITY STRATEGY



STRATEGIC DRIVER 1:

Culture Focused on Sustainability

STRATEGIC DRIVER 2:

Teaching, Learning and Research

STRATEGIC DRIVER 3:

Self-Sustaining Campus and Sites

STRATEGIC DRIVER 4:

Operational Excellence

STRATEGIC DRIVER 1:

Culture Focused on Sustainability

Leadership and Vision

Communications

Strategic Partnership and Continued Engagement

Learning and Development

In this strategic driver, McMaster intends to grow in its commitment to collaborating across campus to promote a culture of sustainability through leadership, communications, engagement and learning as a community. The following stories of progress, projects and initiatives are just a few of the ways McMaster's students, faculty and staff developed and deepened a culture of sustainability in the past year.

Students join together at first-ever Student Sustainability Ambassador Program (SSAP) Bonfire Social. SSAP is a hub for sustainability groups and civic leaders at McMaster.

Sharing our progress:

Sustain 3S03 undergraduate students with their Community Project Champions Monica Palkowski, living learning coordinator, Housing & Conference Services and Liana Bontempo, wellness and sustainability manager, Hospitality Services. From left to right: Guneet Mahal, Raagavi Ramenthiran, Monica Palkowski, Neha Dhanvanthry, Liana Bontempo and Gallant Shang.

Leadership and Vision: *Revitalizing the Office of Sustainability*

To advance sustainability efforts across the university, McMaster is revitalizing its Office of Sustainability to help engage leaders in planning projects and change initiatives that will achieve the university's **Sustainability Strategy**. McMaster's Office of Sustainability will expand to further engage the university community, encourage dialogue, support the creation of clear sustainability action plans across, and ensure McMaster meets goals and reports achievements.

Communications: *Strategic storytelling*

McMaster is sharing stories and celebrating the university's sustainability-related achievements in research, teaching and learning, and campus operations. In the past year, McMaster's inaugural **Sustainability Strategy: A Living Laboratory for Sustainability** launched with a collective commitment to transform campus into a living laboratory of sustainability. Collaborations between students, faculty and staff, such as the ACCESS Tech used technology drive, McMaster's community fridge, water bottle refill campaign, sustainable procurement, and the native bee project on campus were just some of the stories shared.

Volunteers Chanthorn Hack and Steve Tadros removing parts from computers and laptops for re-use or recycling at the ACCESS Tech IT Reuse Drive. Students from the Academic Sustainability Program collaborated with McMaster's Facility Services, University Technology Services (UTS) and Empowerment Squared to collect donations of used technology and distribute to Hamiltonians in need.

Sharing our progress:

CItyLAB Semester in Residence (SIR) is a unique community engagement program for students to collaborate on strategic initiatives with staff from the City of Hamilton and community partners to achieve tangible, real-world results.

Strategic Partnership and Continued Engagement: *Collaborating for sustainable development in Hamilton*

Buildings emit 14 per cent of carbon emissions in Hamilton, according to a group of McMaster students who took part in the CityLAB semester in residence in 2021. As part of this immersive program that expands the university's partnership with the City of Hamilton, McMaster students completed a **project with the goal of raising public awareness about how Green Development Standards (GDS)** can help decrease greenhouse gas emissions by incentivizing developers to build sustainable buildings, while also being equitable and inclusive. As part of this project, the students partnered with leaders from **Friendly Streets for Black, Indigenous & Racialized Communities** and **Environment Hamilton**, and pulled together a range of local stakeholders from municipal government, developers, and the non-profit sectors to advance equitable and inclusive GDS in Hamilton. Learn more about the community partnerships and sustainability-focused projects from the 2021 semester on the **CityLABS** website.

Learning and Development: *Sustainable continuing education*

Our community has asked for more opportunities to learn about adopting sustainability-minded practices and McMaster University's continuing education has delivered a comprehensive offering of courses for the professional learner that examines best practices for living and working sustainably. Launched in 2021, the **Sustainability Program** offers mature students from all backgrounds the option to earn a Certificate of Completion by taking courses related to sustainable principles, business practices, and responsible consumption.

SPOTLIGHT:

Flexible sustainability education for busy professionals

"Sustainability is about meeting the needs of the present without compromising the ability of future generations to meet their own needs," says Somayeh Rokhgireh, sustainability management specialist and instructor with McMaster University's continuing education Sustainability Program. In this program, Rokhgireh has taught students from Canada, and as far as Peru, Sudan and Thailand to develop a holistic perspective on sustainable business principles and practices as well as personal consumption leading to sustainable living.

Lorraine Carter, director of McMaster continuing education, and her team saw a need to offer a holistic approach to learning about the impact sustainable living and commerce can have on environmental and societal systems. Sam (Saeed) Nejatian, a renewable energy and business management expert, and Rokhgireh were engaged to develop course content. They are both now active instructors. The program attracts entrepreneurs and professionals from across Canada and globally who would like to help their organizations go from status quo to more sustainable business principles and practices.

Beli Samuel Pérez, a project manager and MCE Sustainability Program student from Peru said he decided to enroll in the program to build a solid foundation in sustainability knowledge on a personal and professional level.

"I have prior working experience as a sustainability assistant. After acquiring further knowledge in the field from the MCE program, I feel more prepared to continue my sustainability journey both at a national and international level," says Pérez. "In the program I learned about the UN SDGs, and I feel this connected me to something bigger than myself, something that gives me a global view of sustainability."

Pérez appreciated the program's flexible, self-paced, online delivery format that involved discussion forums and interaction with instructors and peers online. He has taken three of the four courses available and is eligible for the Certificate of Completion. However, he plans to take all available courses out of interest.

Somayeh Rokhgireh, instructor (left) and Beli Samuel Pérez (right), a project manager and MCE Sustainability Program student interacted online, as the program is delivered virtually and students join from around the world.

Lorraine Carter, director of McMaster Continuing Education and Sam (Saeed) Nejatian, instructor and course developer with the Sustainability Program at McMaster's Centre for Continuing Education in downtown Hamilton.

STRATEGIC DRIVER 2:

Teaching, Learning and Research

Sustainable Research

Interdisciplinary Learning

Campus as a Living Laboratory

Digital Learning and Environment

McMaster is committed to supporting sustainable research, teaching and learning. In this year's report, we share a selection of the progress our researchers made in addressing the most pressing challenges facing our climate and planet. We also share examples of how our students have been active partners in developing a living laboratory for sustainability on campus in the 2021/22 academic year.

Researchers, Hossein Medhi and Tabitha Mizra, in the Desjardins Canal in Dundas studying the effects of human activities on the health of freshwater and marine ecosystems.

Sharing our progress:

Undergraduate students Grace Kuang, Ramitha Muralitharan, Maryam Rehman, and Michelle Mariaprabhu, from the Student perceptions of sustainability research project team, with Kate Whalen, Associate Director, Academic Sustainability Program.

Sustainable Research: *Environmental scan*

An environmental scan led by Jessica Achebe, a postdoctoral fellow in the Faculty of Engineering and Sally McKay, a postdoctoral fellow in the School of the Arts, paints a picture of an active sustainability research community at McMaster and provides an inventory of research across areas such as climate change, water, energy, and community justice. The report notes that McMaster researchers are collaborating on multi-disciplinary teams and believe in the importance of integrating Indigenous perspectives as core principles of planetary health. The researchers put forth a recommendation for a hub of sustainability research, designed to maximize connections across disciplines, aligning with the strategic goal of increasing research collaboration to tackle sustainability-related challenges.

Interdisciplinary Learning: *Student perceptions of sustainability*

Students from interdisciplinary backgrounds enrolled in a fourth-year Academic Sustainability Programs (ASP) course partnered with the Office of Sustainability on a project to better understand how students perceive McMaster's sustainability practices. Interviews were conducted with highly engaged undergraduate students from the Student Sustainability Ambassadors Program (SSAP) and recommendations were presented based on a qualitative thematic analysis. The results highlighted that students want to be more aware of sustainability initiatives on campus and more involved in sustainability-related decision-making. The findings show that the students interviewed want the university to better connect sustainability goals with progress made along the way. The learnings from this report will be incorporated into future planning by the Office of Sustainability. The report can be found on ASP's website.

Sharing our progress:

The West Campus Eco-Art project reimagines Parking Lot M with stencilled art of key species of flora, fauna, historic symbols, all painted along blue lines that represent the former routes of Coldwater Creek. (Photo by Colin Czerneda, Faculty of Humanities)

Campus as a Living Laboratory:
Renaturalizing of parts of west campus

McMaster invites all university community members to think of campus as a place to pilot new sustainability related ideas and projects. The Watershed Trust **has evolved** over the last decade as artists, professors, and students collaborated with renowned artist Patricia Johanson to propose ways to redesign a part of McMaster's west campus as a mosaic of wetlands, while still creating space for the university's logistical needs, like parking and outbuildings. In 2021, a feasibility study measured available water for the project and the **School of the Arts painted on the asphalt**, mapping one of the creek's routes from over the last century. The Watershed Trust is co-led by the Faculty of Humanities and the Faculty of Science and allows for opportunities for experiential learning and integrated campus community projects in the west campus. Plans proposed for the west campus will be explored in more detail through the Campus Master Planning process, which began in 2022.

Digital Learning and Environment:
Optimizing energy use in the classroom

Innovative technology is making McMaster's buildings smarter and more sustainable. In 2022, McMaster University was awarded $200K CAD in funding from **Cisco's Country Digital Acceleration program**, with plans to use digital systems to develop a proof of concept that will automate and synchronize building systems. By integrating the heating, cooling, lighting, audio visual and access systems in classrooms and synchronizing with the classroom scheduling system for activation during scheduled times, McMaster will conserve energy and improve the experience and comfort of everyone in the classroom. Another one of the goals is to collect real-time metrics to improve classroom optimization, meaning that classroom energy use will match the comfort needs of the fluctuating number of students in classrooms throughout the day, saving more energy over time.

Students in the Peter George Centre for Living and Learning.

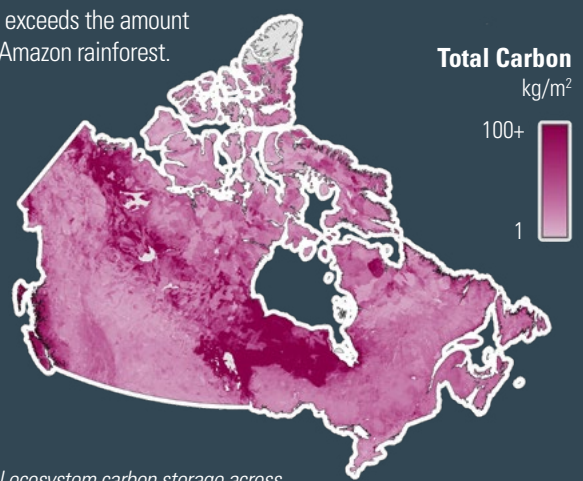
SPOTLIGHT:

McMaster researchers use machine learning to map carbon storage across Canada

In the fall of 2021, a WWF Canada research study led by **McMaster researchers** on the climate impacts of disturbing enormous amounts of carbon captured in soil across Canada was shared at COP26, the United Nations Climate Change Conference in Scotland. The research analysis, conducted by Alemu Gonsamo, assistant professor and Canada Research Chair in Remote Sensing of Terrestrial Ecosystems and Camile Sothe, postdoctoral researcher, shows that 21.1 billion tonnes of Canada's carbon stocks are stored in its forests, much of it in the soil below ground.

A map of these forests reveals that the area around Hudson's Bay has the highest density of carbon captured in the soil and therefore would do the most harm to the climate if disturbed and released into the atmosphere. Since there is no way to take physical soil samples from all of Canada, the two McMaster researchers used satellite data and machine learning to estimate carbon storage density from across the country.

The study was reported in **national newspapers**, where Gonsamo was quoted as saying, "the biggest finding is that the amount of carbon in the top one metre of soil is so huge compared to other estimates," adding that it exceeds the amount stored in the Amazon rainforest.



Total terrestrial ecosystem carbon storage across Canada. Darker shades represent larger carbon stocks. The study revealed significant carbon stores in coastal British Columbia's forests, the boreal forest and the Hudson and James Bay Lowlands. Source: Sothe et al. 2022

Alemu Gonsamo, assistant professor and Canada Research Chair in Remote Sensing of Terrestrial Ecosystems.

STRATEGIC DRIVER 3:

Self-Sustaining Campus and Sites

Eco Parks and Greenspace

Health and Well-being

Active and Alternative Transportation

Planetary health and the community's well-being are interconnected. In this strategic driver, McMaster is creating a self-sustaining campus and locations by focusing on promoting active transportation, protecting biodiverse ecosystems and developing self-sustaining food systems on campus that help alleviate food insecurity. Read on to learn what we accomplished together this year.

Volunteers at the Earth Day tree planting event at McMaster's Carbon Sink Forest in 2022.

Sharing our progress:

The bridge between the McMaster Children's Hospital and the Michael DeGroote Centre for Learning and Discovery.

Eco Parks and Greenspace: *Protecting birds with high-tech windows*

Migratory patterns can lead birds to fly through McMaster's central campus during their migration seasons. To prevent these birds from hitting glass windows, researchers have been auditing and tracking campus areas where there is a higher chance of bird contact. This annual tracking has led to the placement of decals on both bridges between Michael DeGroote Centre for Learning (MDCL) and the McMaster Children's Hospital, as well as on the Cootes Paradise-facing side of Les Prince residence in partnership with Facility Services. The team, led by biology professor Jim Quinn hopes to place more of these decals across campus, such as on bridges between other buildings. They also hope to encourage the use of bird-friendly glass in new buildings.

Jim Quinn, biology professor at McMaster University, is working with McMaster staff to prevent birds from hitting glass windows on campus during migration flights.

Sharing our progress:

Sufal Deb, an undergraduate student, was a part of the team that started the McMaster Community Fridge, a student-led initiative on campus offering access to food on campus.

Health and Well-being: *Community fridge on campus*

As McMaster builds on its commitment to self-sustaining food systems on campus and supporting societal wellbeing, more must be done to connect optimal human health and access to nutritious food. Students from the Academic Sustainability Program collaborated with the McMaster Student Wellness Centre, MSU Food Collective Centre and other administrative services to **install and operate a community fridge on campus**. The fridge opened in the spring of 2022 and offers access to nutritious and free produce, packaged meals and other food staples. The fridge is open 24/7 for anyone to access.

Active and Sustainable Transportation: *Hamilton Bike Share and bike storage improvements*

McMaster is proud to host **Hamilton Bike Share** racks on campus, offering an active mode of transportation 24 hours a day, 365 days of the year. Hamilton Bike Share Inc., the local not-for-profit organization that operates the local bike share system is partnering with the City of Hamilton to add 35 new bike racks on campus this coming year, offering more students, faculty, and staff a sustainable ride. In addition, the Sustainable Mobility team at the City of Hamilton have obtained federal grant funding for improvements to bike storage facilities on campus and is currently working with McMaster's Multi-Modal Transportation for Healthy Communities Committee to identify opportunities.

Hamilton Bike Share racks on campus.

SPOTLIGHT:

A Living Laboratory at the McMaster Carbon Sink Forest

McMaster University's Centre for Climate Change is researching how forests effectively combat climate change by sequestering carbon on a hectare of land that will be donated to the university in west Hamilton. By planting native, resilient species of trees, the Centre, along with Nature at McMaster and a local non-profit **Trees for Hamilton**, is creating a forest that stores more carbon than it releases, called a carbon sink forest. The forest will create important opportunities for research and education.

Altaf Arain, director of McMaster's Centre for Climate Change, shared how he thought the forest will create opportunities for research and education in a **feature story developed by the Faculty of Science**.

"There are huge research questions we can answer with this forest," Arain said. "The number one question we want to ask is how quickly will it be a net carbon sink? What's the survival rate and the growth rate of the trees? Down the road, biologists can look at the impact of biodiversity. It will be like a learning lab for students."

In addition to benefitting the environment, evidence shows that trees have a positive impact on human health and healing. In the future, McMaster's Centre for Climate Change hopes the McMaster carbon sink forest will be a place for public education and support the well-being of the people who visit.

"There's actually been studies that show planting trees decreases the risk of cardiovascular death in the areas that have more trees, improved immune function, and all of the mental health stuff I think people are aware of now. Stress, anxiety, anger, violence, mood all benefit from having trees," said Myles Sergeant, a physician, McMaster instructor, and the president of **Trees for Hamilton** in the same story.

Want to learn more about the benefits of forest immersion or the research on carbon sequestration at McMaster? With science communication as a strategic priority, McMaster University's Faculty of Science created a series of long-form science reads, including one on the **McMaster Carbon Sink Forest**, that can be enjoyed online.

Tree planting event at McMaster's Carbon Sink Forest.

STRATEGIC DRIVER 4:

Operational Excellence

Sustainable Infrastructure, Energy, and Water

Waste

Responsible Investing

Sustainable Procurement

Metrics

McMaster's Sustainability Strategy outlines the university's dedication to transforming administrative and operational practices to be more sustainable. This will involve carbon and energy reduction, with the goal of being a carbon-free campus, reducing waste and committing to environmentally responsible procurement. Developing time-bound metrics that clearly benchmark our progress across all strategic drivers will be a priority and a responsibility shared by all McMaster leaders. The progress included here is a sample, and more efforts and initiatives will build on this foundation every reporting year.

Hospitality Service employee Darren Gibbons places food in a compostable container at Centro@Commons dining hall on campus.

Sharing our progress:

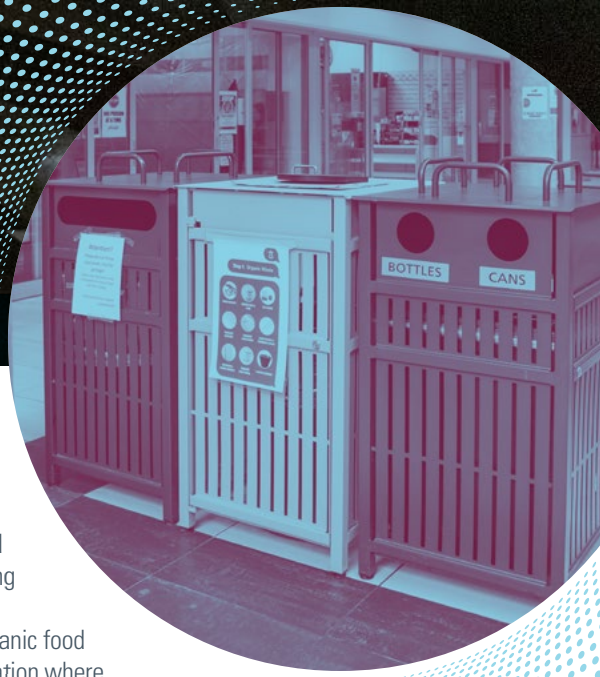
Jen Rubio, operating engineer in the E.T. Clarke Centre with the extensive heating and cooling system underneath McMaster's campus.

Sustainable Infrastructure, Energy, and Water: *Electric-powered steam*

McMaster University is taking the first big step in the university's **Net Zero Carbon Roadmap**. McMaster has relied on natural gas-powered boilers to produce the steam required for heating campus. This year, McMaster is installing two electric boilers, and this will lead to a 23 per cent reduction in carbon emissions on campus. This reduction is equivalent to 9,200 tonnes of CO2e, which is like taking 2,819 gas-powered passenger vehicles off the road.

Waste: *Campus food waste champions*

Everyone on campus plays a role in diverting organic waste from landfills. In addition, Hospitality Services' kitchens recycle 100% of food waste. McMaster's main campus started an organic food waste recycling program for staff before the COVID-19 pandemic and plans to expand participation. To participate, a department champion can request an organic food recycling receptacle from Facility Services, who specifies a drop-off location where the vendor picks up the organic waste for recycling. Want to become an organic food waste champion for your area? Email clerks@mcmaster.ca.



Organics recycling bin at the McMaster University Student Centre (MUSC).

Sharing our progress:

Sustainability students, Aryan Patel, Joy Xu, and Helena Teng who created McMaster's first sustainable procurement program with collaborators from Strategic Procurement, Tracie Felton and Angelo DiLettera, and Kate Whalen, Associate Director, Academic Sustainability Program.

Responsible Investing:
Aligned with the United Nations

McMaster is aligned with the United Nations Principles for Responsible Investing incorporating environmental, social and governance considerations across investment manager selection and monitoring of performance and holdings. The University has adopted an accelerated decarbonization approach for the Investment Pool having reduced portfolio carbon emissions by over 50% since 2018. McMaster is now targeting a 65% carbon reduction by 2025, 75% by 2030, and the rest as soon as possible thereafter. As Canada's first University to adopt the Task Force Recommendations for Climate-Related Financial Disclosures, additional information is available on **McMaster's responsible investing website** and in the **Annual Financial Report**. McMaster's pension assets are overseen with pension plan members and both the salary and hourly plans are in process of reviewing the merits of potential UN-aligned decarbonization strategies.

Tied for 1st place

In a **newly released study by the C.D. Howe Institute**, McMaster tied for first place in Canada with the University of British Columbia for its endowment emission reduction plan, governance and disclosure of its plan and progress.

Sustainable Procurement:
Students help McMaster buy better

McMaster spends over a quarter of a billion dollars on goods and services annually. Given this, it is essential to consider sustainable impacts during strategic sourcing activities. Partnering with the Academic Sustainability Program, both students and procurement staff created online tools to support McMaster's community in deploying sustainable procurement practices. **McMaster's first Sustainable Procurement webpage** is complete with resources to support social and environmental purchasing. Everyone who makes purchasing decisions at McMaster is encouraged to learn more about how McMaster's Department of Strategic Procurement can help ensure what we buy and how we buy aligns with our sustainability commitments.

Sharing our progress:

1,014
TOTAL PUBLICATION TAGS TO AN SDG

516 **PUBLICATIONS TAGGED TO SDG 3** (GOOD HEALTH AND WELL BEING)

3 GOOD HEALTH AND WELL-BEING

134 **SDG-TAGGED PUBLICATIONS:** FUNDED BY NATIONAL SCIENCES AND ENGINEERING RESEARCH COUNCIL (NSERC)

PUBLICATIONS TAGGED TO SDG 3 WERE CITED 2,763 TIMES FOR AN AVERAGE OF 5.35 TIMES PER PUBLICATION

165 **PUBLICATIONS TAGGED TO SDG 7** (AFFORDABLE AND CLEAN ENERGY)

7 AFFORDABLE AND CLEAN ENERGY

113 **SDG-TAGGED PUBLICATIONS:** FUNDED BY CANADIAN INSTITUTES OF HEALTH RESEARCH (CIHR)

Metrics: *Tracking McMaster's research related to the United Nation's Sustainable Development Goals (UN SDGs)*

Interested in further exploring McMaster's contributions to research related to the UN Sustainable Development Goals? Check out **Dimensions**, a research output and citation platform available to McMaster University students, staff, and faculty to explore research within and beyond the university. Want to know how many McMaster research papers were published in 2021 related to UN SDG 7: Affordable and Clean Energy (164), or how McMaster compares to other universities in these areas of research? **Explore the data online** and reach out to McMaster Library's Research Impact Specialist to learn more.

SUSTAINABLE DEVELOPMENT GOALS

SPOTLIGHT:

McMaster's campus is on the road to net zero carbon emissions

McMaster's **Net Zero Carbon Roadmap** was developed in 2020 as a pathway to achieve net zero carbon emissions, which the **Canadian government** defines as emitting no greenhouse gases or offsetting emissions, "for example, through actions such as tree planting or employing technologies that can capture carbon before it is released into the air."

The proposed path originally involved a 75 per cent emission reduction by 2030 and a 90 per cent reduction by 2050, with the remaining 10 per cent of emissions being achieved by installing more renewable energy projects or purchasing carbon credits.

"We are excited to share that McMaster is looking for ways to fast-track our plan to eliminate greenhouse gases on campus. We are developing a plan for achieving net zero carbon emissions on campus by as early as 2035," says Debbie Martin, chief facilities officer. "Students, faculty and staff identified infrastructure, energy and water as the top drivers of sustainability at McMaster and this acceleration towards net zero carbon emissions is part of our **Sustainability Strategy**."

Future initiatives are being explored. The plan includes the potential for geothermal heating and cooling, waste-water heat recovery, and electrifying the fleet of service vehicles on campus. Renewable energy production using photovoltaic installations and carbon capture strategies are also potential future elements of the plan. After installing electric boilers, the next step in the roadmap will reduce the use of a cogeneration energy production plant, reducing emissions on campus an additional 21 per cent.

"Energy conservation in buildings will also help McMaster achieve net zero carbon emissions. Our new construction projects include high-performance envelopes, efficient ventilation, and LED lighting with occupancy sensors to save energy," says Lalita Goray, director of design and construction and co-chair of McMaster's Sustainability Advisory Council. "Sustainable design and construction aligns with a number of the United Nations (UN) Sustainable Development Goals (SDG) and will improve the health of our planet."

Net Zero Carbon Roadmap:

Planning to achieve
NET ZERO CARBON EMISSIONS
on campus by as early as
2035

THIS YEAR:

INSTALLING TWO ELECTRIC BOILERS, LEADING TO:

23 **PER CENT** REDUCTION IN CARBON EMISSIONS EQUIVALENT TO **9,200 tonnes** OF **CO2e**

LIKE TAKING **2,819 gas-powered vehicles** OFF THE ROAD.

NEXT:

REDUCING COGEN ENERGY PRODUCTION WILL CUT EMISSIONS BY A FURTHER

21
PER CENT

We are also exploring:

- Geothermal heating and cooling
- Waste-water heat recovery
- Electric fleet vehicles
- Increasing renewable energy

Alvin Baldovino, Assistant Director, Engineering Operations at McMaster University on the Ivor Wynne Centre roof top with solar thermal collectors on campus. McMaster's 60 solar thermal collectors on campus provide pre-heating to a large swimming pool area.

A Message from the Co-Chairs of McMaster's Sustainability Advisory Council:

Debbie Martin, Assistant Vice-President and Chief Facilities Officer
Kate Whelan, Associate Director, Academic Sustainability Programs
Lalita Goray, Director, Design and Construction

McMaster's inaugural, university-wide Sustainability Strategy launched on Earth Day, April 22 2022. That same day, three events were held with the goal of inspiring action about the challenges facing our planet and society. On Earth Day, the shelves of the McMaster Community Fridge shelves were filled by donations from our community to help address food insecurity. At the ACCESS Tech donation drive, students, faculty and staff donated hundreds of used technology items, keeping them out of landfills and sharing them with Hamiltonians in need. At the McMaster Carbon Sink Forest, volunteers from our community planted 250 trees. Leading up to these events, students, faculty and staff collaborated for months on sustainability related initiatives that encourage McMaster's community members to participate.

McMaster's Sustainable Advisory Council (MSAC) will continue to support and connect students, faculty and staff who are leading initiatives that will transform our campus into a living laboratory for sustainability. Next year, our council hopes to see more opportunities for involvement and more community members inspired to participate in sustainability related initiatives. We want to invite all of McMaster's community to get involved and collaborate across campus to achieve McMaster's Sustainability Strategy. Our ability to work together with students, faculty and staff as partners, is one of our many strengths.

The progress in this report was made possible by Susan Tighe, Provost and Vice-President, Academic and Saher Fazilat, Vice-President, Operations and Finance, who are the champions of McMaster's Sustainability Strategy.

We would like to express our gratitude to the members of the MSAC and the McMaster community for their support for sustainable projects this year. Finally, we would like to thank you for reading our second Sustainability Report.

*Students installing new solitary bee homes on campus. Thanks to the teamwork of many students, staff and faculty, McMaster is designated a **Bee City Campus**.*

Connection to United Nations Sustainable Development Goals

Please note that the initiatives highlighted in this report are non-exhaustive. For more information on how McMaster is addressing all 17 of the United Nations Sustainable Development Goals (UN SDGs), visit **McMaster's Sustainable Development Goals site**.

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Undergraduate students Batool Malik, Alisha Gauhar, Sufal Deb, Kyle Yau, and Morghen Jael, director of the MSU Food Collective Centre, who were part of the team that initiated the Community Fridge on campus.

Connect with us:

You can learn more about McMaster's Sustainability Strategy and view previous sustainability reports on our website at **sustainability.mcmaster.ca**. Have a question for McMaster's Office of Sustainability? Email sustainability@mcmaster.ca.

BRIGHTER WORLD

McMaster University