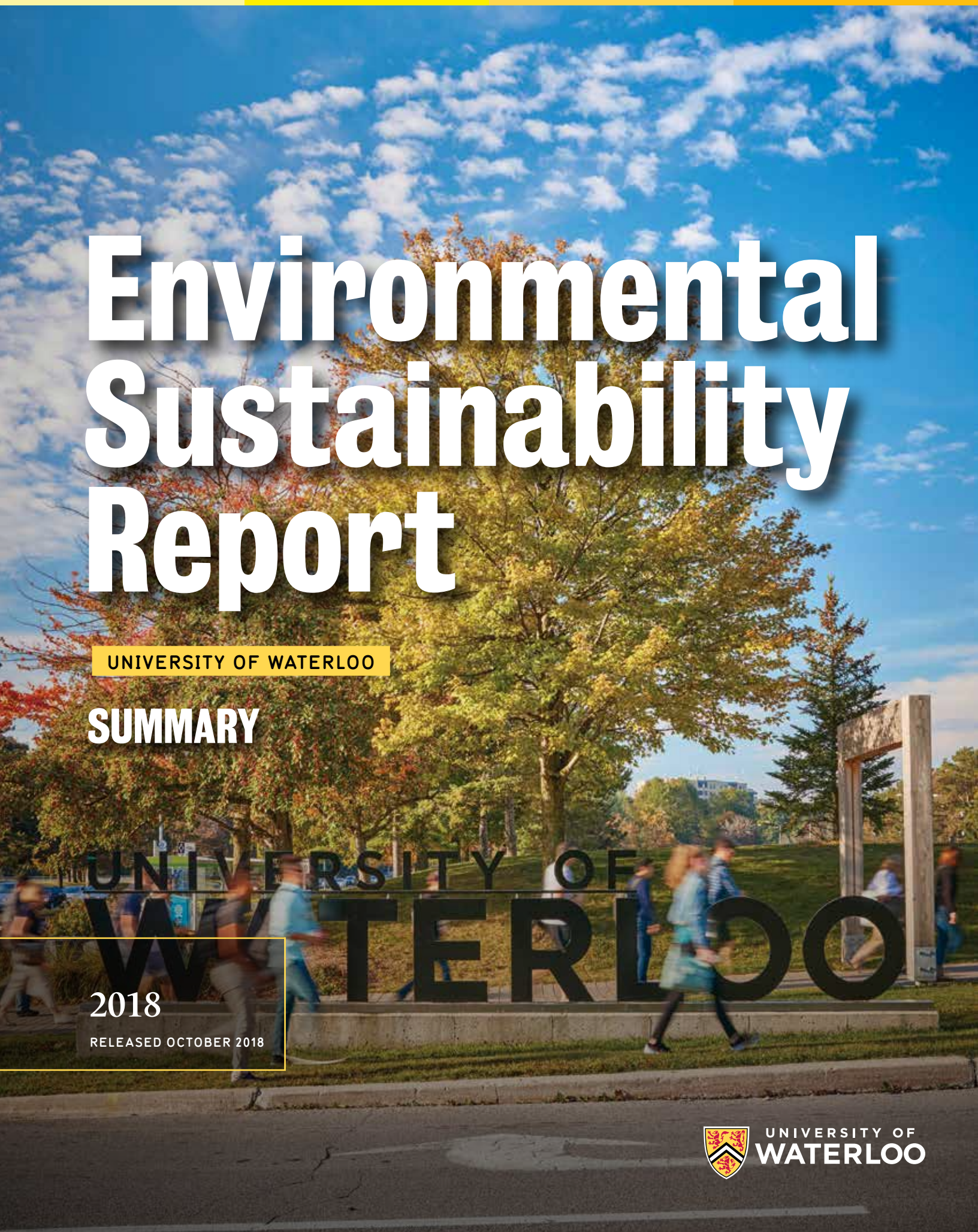

Environmental Sustainability Report

UNIVERSITY OF WATERLOO

SUMMARY

2018

RELEASED OCTOBER 2018

UNIVERSITY OF WATERLOO

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Prepared by the President's Advisory Committee on Environmental Sustainability

INTRODUCTION

Message From The President

Waterloo released its first ever Environmental Sustainability Strategy last year, and the progress that has been made over just one year has been very encouraging. The creation of the Strategy was itself a milestone, and the gains illustrated in this report, big and small, are all important and reflect concerted effort across our community.

As the host institution of the newly created Sustainable Development Solutions Network Canada, our University will continue to be a major driver for Canada and the world in making strides towards the United Nation's 17 Sustainable Development Goals (SDGs) and their embedded targets.

This Sustainability Report is our way of keeping the University accountable during our strategy's life to 2025. Meeting our targets and objectives will take time. This is the first year in an eight year strategy, and there remains considerable work to do.

We are an academic and research institution that has the opportunity to influence current and future leaders by instilling a sustainability lens in how we teach and do research. We endeavour to make sustainability a hallmark of our operations from water management to transportation, energy and waste. We must continue engaging with all members of our community through new programs, training and recognition platforms. And, we must implement new policies and governance mechanisms to remain accountable to our goals.

Waterloo is home to tremendously innovative and driven thinkers and we are leveraging that strength and the passion of our entire community to make a lasting impact on sustainability at our University and around the world. Every member of our community can and will play a role in making sustainability something we live and breathe each and every day.

Thank you for taking the time to read this report and for everything you do to make our University and global community a more sustainable place.

I am pleased to present Waterloo's 2018 Environmental Sustainability Report, which tracks our actions and progress over the past year.

Sincerely,

FERIDUN HAMDULLAHPUR

PRESIDENT AND VICE-CHANCELLOR
UNIVERSITY OF WATERLOO

About this Report

Overview: This summary report highlights examples of progress towards each of the 27 objectives that were established in Waterloo's Environmental Sustainability Strategy. The report is divided into sections on Academics, Operations, and Engagement, and describes relevant projects and initiatives that have occurred at Waterloo up to and including June 2018.

The report also includes key highlight statistics and an assessment of the status of each objective, to give the community a snapshot of Waterloo's progress. As this is the first year of implementation, it should be understood that many objectives are only in the "Started" phase, and will move towards completion over time.

Detailed breakdowns on actions and data can be found in the "Details and Data" supplement to this report.

Definitions: By definition, sustainability means maintaining the integrated health of the environment, society, and economy for today and into the future. While this report focuses primarily on environmental indicators relevant to the University of Waterloo, it recognizes that there are mutually reinforcing connections with financial and social sustainability. For brevity, the term "sustainability" will refer to environmental sustainability in this report.

Territorial Acknowledgment: The University of Waterloo acknowledges that it operates on the traditional territory of the Attawandaron (Neutral), Anishinaabeg and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes ten kilometers on each side of the Grand River.

Framework: The University of Waterloo has made efforts to align the data and indicators within this report to those of the Sustainability Tracking, Assessment, and Rating System (STARS) developed by the Association for the Advancement of Sustainability in Higher Education (AASHE), as well as to the objectives established under Waterloo's Environmental Sustainability Strategy.

Sustainable Development Goals: Within the framework of the report, Waterloo also maps its actions towards advancement of the global United Nations Sustainable Development Goals (SDGs). The SDGs are 17 goals with 169 targets, established by the United Nations General Assembly, and provide a blueprint for a prosperous and sustainable future for all. Read more at *un.org/sustainabledevelopment*

Reporting boundary: This report covers all University of Waterloo campuses, unless otherwise noted. The report indicators do not reflect information from Affiliated and Federated Institutions of Waterloo, although information is included in appendices for transparency.

Contact: Please address any questions about this report to the Sustainability Office (sustainability@uwaterloo.ca).

For full data and details on each objective and indicator, consult the Data and Details report, available at uwaterloo.ca/sustainability/2018reportdetails

Summary of Progress

Each objective from Waterloo's Environmental Sustainability Strategy is included in the report, with a status indicator to summarize qualitative or quantitative completion. As the Strategy was released in fall of 2017, it is expected that many of the objectives are in the "started" stage.

STATUS

Not started


Started


Somewhat complete


Mostly complete


Completed

Goal: be a leader in sustainability education and research

OBJECTIVE	PROGRESS
A1: by 2019, ensure undergraduate students from any program of study will have the opportunity to learn about sustainability in their courses	
A2: by 2025, identify and implement flexible strategies for 5 programs of study to more deeply integrate sustainability within the curriculum	
A3: by 2025, every startup emerging from supporting programs at Waterloo will have access to tools and training to embed sustainability into their emerging business plans and models	
A4: by 2020, celebrate sustainability research as a core thematic strength of Waterloo's reputation and identity	
A5: by 2025, become a world leader for research excellence in 5 sustainability related themes	
A6: by 2025, establish Waterloo as a "go-to" hub for knowledge and expertise on sustainability challenges	
A7: by 2018, implement 3 new sustainability-related projects annually on campus using faculty and student expertise; by 2025, implement at least 8 new projects annually	

[1]For full details on STARS, see Association for the Advancement of Sustainability in Higher Education (2017). Sustainability Tracking, Assessment, and Rating System. Accessed June 2018 from stars.aashe.org

Goal: operate the campus sustainably

OBJECTIVE	PROGRESS
O1: by 2019, develop a long-term Climate and Energy Action Plan to achieve carbon neutrality by 2050	
O2: implement cost-effective and practical strategies to reduce or minimize growth in energy use on campus	
O3: by 2025, achieve a 60% diversion rate; by 2035, become a zero-waste (90% diversion rate) campus	
O4: by 2025, reduce water intensity by 5% per square metre from a 2015 baseline	
O5: by 2025, expand the deployment of stormwater management technologies to targeted areas	
O6: by 2025, increase to 90% the proportion of sustainable commuting trips from a 2016 baseline of 85%	
O7: by 2020, increase electric and alternative-fuel vehicle use on campus	
O8: by 2025, reduce fossil fuel consumption across the campus fleet by 25% from a 2015 baseline	
O9: by 2025, all University grounds will be maintained according to sustainable landscaping standards, and plans developed for remediation and preservation of specific natural areas of concern	
O10: by 2025, 40% of all Food Services food and beverage purchases are produced on-site, locally, or are third-party certified for sustainability	
O11: by 2018, achieve and maintain a Fair Trade Campus designation	
O12: by 2020, deliver multifaceted programming to grow student and employee awareness about healthy and sustainable food choices	
O13: by 2020, evaluate life cycle cost and require sustainability disclosure from suppliers for all purchasing decisions over $100,000	
O14: by 2018, establish baseline data and targets to improve the percent of campus-wide purchases that meet third-party standards for paper, electronic equipment, and cleaning supplies	

Goal: embed sustainability into campus culture

OBJECTIVE	PROGRESS
E1: by 2020, Waterloo broadly distributes timely and audience-relevant information about sustainability initiatives and opportunities within the campus community	
E2: by 2020, additional programming is developed for incoming students during orientation and in residences to encourage sustainable living on campus	
E3: by 2018, establish a sustainability leaders program in partnership with students from residences, clubs and societies, student government, and for students in off-campus housing	
E4: by 2025, increase from 5% to 25% the proportion of university departments that are Green Office certified	
E5: by 2020, Waterloo is recognized as a sustainability leader in Waterloo Region	

Benchmarking and Foundational Actions

OBJECTIVE	PROGRESS
G1: by 2025, achieve and maintain a STARS Gold designation through the Association for the Advancement of Sustainability in Higher Education	

Key Stats

527 COURSES
focused on or related to sustainability

485 FACULTY
members conducting research that advance the global Sustainable Development Goals

100% GROUNDS MANAGED
to integrated pest management principles

17.1% REDUCTION
in greenhouse gas emissions per square metre since 2010

8.3% DECREASE
in water use per square metre since 2015

42% WASTE DIVERTED
from landfill

3 NEW ELECTRIC VEHICLE
chargers installed

22.6% TOTAL FOOD
purchases local or certified for sustainability

3 LOCAL SUSTAINABILITY AWARDS
received since 2016

ACADEMICS

As an educational institution, Waterloo has an important role to play in advancing knowledge for a sustainable future, and has a strong history of education and research related to sustainability. Its teaching and scholarship efforts have positioned the University well to achieve its goal of *being a leader in environmental sustainability education and research*.

PROGRESS SNAPSHOT

OBJECTIVE A1: By 2019, ensure undergraduate students from any program of study will have the opportunity to learn about sustainability in their courses.

STATS

334 Undergraduate courses focused on or related to sustainability

527 Total courses focused on or related to sustainability

OBJECTIVE A2: By 2025, identify and implement flexible strategies for 5 programs of study to more deeply integrate sustainability within the curriculum.

STATS

2 New programs of study considering or integrating sustainability topics

OBJECTIVE A3: By 2025, every startup emerging from supporting programs at Waterloo will have access to tools and training to embed sustainability into their emerging business plans and models.

STATS

Indicatiors forthcoming

Teaching and Learning

One of Waterloo's largest contributions to sustainability challenges lies in educating the next generation of leaders and innovators to develop solutions and integrate sustainability within their own careers. Waterloo has a breadth and depth of curriculum related to sustainability that spans natural sciences, society and governance, and technology and infrastructure.

INTEGRATING SUSTAINABILITY

Each year, Knowledge Integration students create an exhibition as a capstone group project, selecting a topic of interest and designing information and activities to achieve learning objectives for visitors. KI-X 2018 was the first themed year, where students were challenged to pick issues related to the United Nations Sustainable Development Goals. Student teams developed exhibitions structured around food (SDG 2), social connections (SDG 11), news and public trust (SDG 16), consumption choices (SDG 12), and migrant workers in Canada (SDG 8).

CHECK OUT THE KI-X EXHIBITS › *uwaterloo.ca/environment/news/kix2018-tackles-sustainable-development-goals-and-announces*

ENVIRONMENT LAUNCHES PhD IN SUSTAINABILITY MANAGEMENT

Companies and institutions around the world are taking steps to integrate sustainability within their business models. Waterloo's Faculty of Environment recently expanded on its current Master of Sustainability Management by launching a PhD option to further equip the next generation of sustainability leaders in the private, public, and non-profit sector to take on this challenge. The program will connect students with the research skills, management tools, strategies, and processes necessary to realize sustainable outcomes within their organizations.

VISIT THE SUSM SITE › *uwaterloo.ca/environment/news/environment-introduces-sustainability-management-newest-phd*

BUILDING LOW-CARBON FUTURE

Buildings are a significant source of greenhouse gas emissions around the world, and require a new generation of innovators to develop and implement strategies to reduce this footprint. Waterloo's new Architectural Engineering (AE) program, developed collaboratively by Civil Engineering and the School of Architecture, was designed with this in mind. The AE program combines building engineering with architectural design to equip students with the skills and experience to tackle aging buildings and improve energy efficiency. The program will include studio and co-op components, and launches in September 2018.

LEARN ABOUT AE › *uwaterloo.ca/engineering/news/waterloo-introduces-unique-architectural-engineering-program*

GETTING RID OF HARMFUL MICROFIBRES

If you have ever washed your laundry, you have unwittingly released tens of thousands of microfibres down the drain. These tiny pieces of synthetic fibres usually find their way back into nature, threatening fish species and making their way back up the food chain to human consumption. A team of student entrepreneurs at Waterloo has been working on new technologies to capture these microfibres and protect natural ecosystems and human health. Launched at the AquaHacking competition in May 2017 and with support from Velocity Science, Polygone plans to develop and commercialize filters for residential and commercial use. Their unique, combination technology allows for the highest microfibre capture rates in straight-forward, easy to use products.

READ THE POLYGONE TECHNOLOGIES STORY › *velocity.uwaterloo.ca/2017/12/the-threat-of-microfibres-in-our-water-and-one-companys-solution*

OUR IMPACT

Strengthening Waterloo's sustainability-related curriculum and entrepreneurship efforts directly support the targets and indicators of three of the UN Sustainable Development Goals:

Research

Waterloo is host to hundreds of faculty members conducting research to build a more sustainable future. Whether through foundational discovery research within the natural sciences, development of transformative technologies, or innovation in governance and social systems, Waterloo's faculty members have built Waterloo into a hub of activity for sustainability scholarship. Over 480 faculty members are conducting research that works towards the targets of the UN Sustainable Development Goals, with thematic strengths in energy, climate change, and water.

PROGRESS SNAPSHOT

OBJECTIVE A4: By 2020, celebrate sustainability research as a core thematic strength of Waterloo's reputation and identity.

STATS

— Indicators forthcoming

OBJECTIVE A5: By 2025, become a world leader for research excellence in 5 sustainability related themes.

STATS

351 Faculty members conducting research related to Environmental Sustainability

485 Faculty members conducting Research advancing the UN Sustainable Development Goals

OBJECTIVE A6: By 2025, establish Waterloo as a "go-to" hub for knowledge and expertise on sustainability challenges.

STATS

— Number of research and knowledge mobilization partnerships forthcoming

OBJECTIVE A7: By 2018, implement 3 new sustainability-related project annually on campus using faculty and student expertise; by 2025, implement at least 8 new projects annually.

STATS

3 Living lab projects completed or underway during 2017–18

PARTNERING FOR THE SUSTAINABLE DEVELOPMENT GOALS

Waterloo was proud to become the host institution for the Canadian chapter of the global Sustainable Development Solutions Network (SDSN). SDSN is a global collection of post-secondary institutions collaborating for the attainment of the UN Sustainable Development Goals. With Canada's largest and most programmatically diverse Faculty of Environment, and interdisciplinary sustainability research embedded across all six faculties, Waterloo was in a strong position to build a pan-Canadian network of post-secondary and civil society institutions to accelerate problem solving for sustainable development. SDSN Canada launched in May 2018 with a launch event featuring Jeffrey Sachs, Director of the SDSN global network and world renowned economist and sustainable development leader. The Faculty of Environment and Waterloo Global Science Initiative are lead partners hosting the network.

READ ABOUT SDSN CANADA › *uwaterloo.ca/sustainable-development-solutions-network-canada*

SHAPING THE FUTURE OF WATER IN CANADA

Waterloo researchers are playing a key role in identifying solutions to pressing global water issues. In 2017-18, nine new projects launched through the Global Water Futures program, featuring principal investigators from Waterloo's Science, Environment, Engineering, and Mathematics faculties. Waterloo-led projects include enhancing the adaptive capacity and resilience of lakes, linking multiple stressors to adverse affects across watersheds, connecting Canadian water governance to global socio-economic drivers, developing transformative technologies and smart watersheds, and advanced modelling of streams, ice and lakes, and groundwater.

The Global Water Futures program is a seven-year initiative to address water issues in Canada led by the University of Saskatchewan and in key partnership with Waterloo's Water Institute and 16 additional post-secondary institutions.

LEARN MORE ABOUT GLOBAL WATER FUTURES › *uwaterloo.ca/global-water-futures*

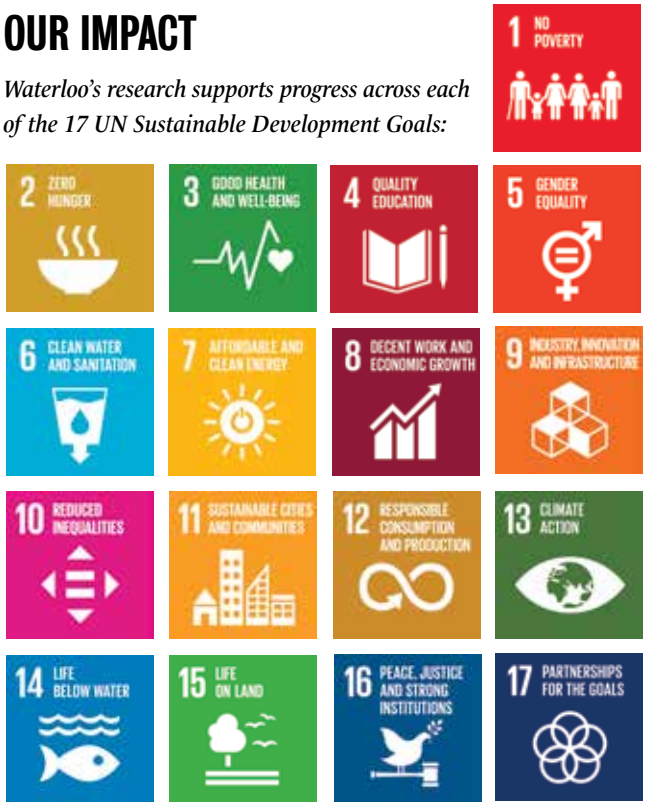
TRANSFORMING TRANSPORTATION

Transportation makes up nearly one quarter of Canada's greenhouse gas emissions, more than heavy industry and all buildings combined. Waterloo researchers are exploring new ways to reduce vehicle emissions. From electrification of the vehicle fleet, to more efficient use of existing vehicles, to encouragement of transit and cycling, the options are diverse. Recent research has culminated in:

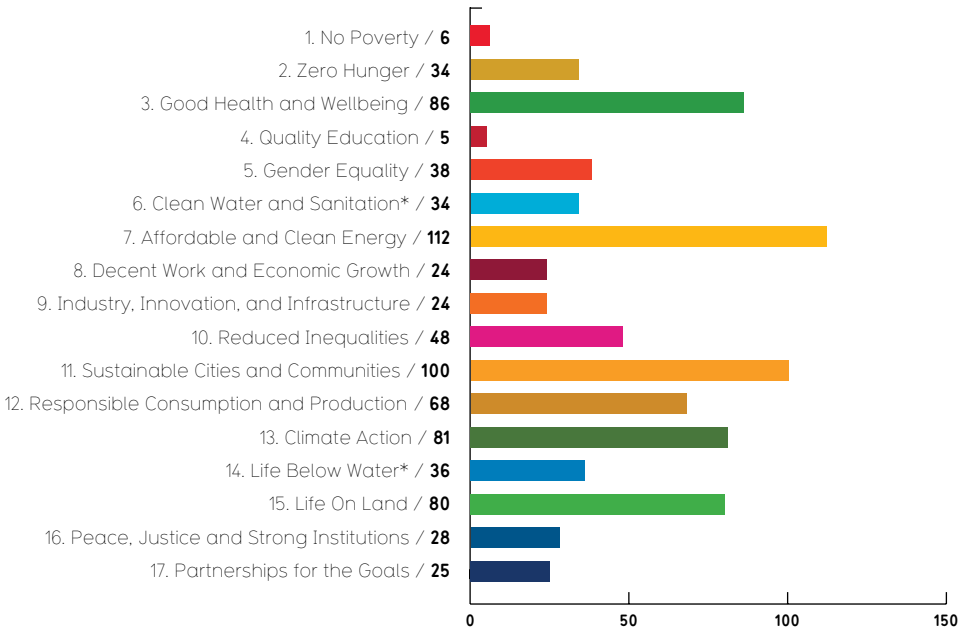
- **Advances in battery technology** that could triple the range of electric vehicles
- **Analysis of social compatibility** to make carpooling more successful
- **Technology to capture waste energy** from buses and trucks to reduce idling, and
- Efficient scale of **Bikeshare systems to support public transit**

OUR IMPACT

Waterloo's research supports progress across each of the 17 UN Sustainable Development Goals:



FACULTY MEMBERS WITH RESEARCH INTERESTS BY GLOBAL GOAL



OPERATIONS

With a large building, land, and population footprint, Waterloo's daily actions also matter locally and globally. Waterloo is integrating practices to reduce environmental impact across its operations, working towards ambitious outcomes to reach our goal to **operate the campus sustainably**.

PROGRESS SNAPSHOT

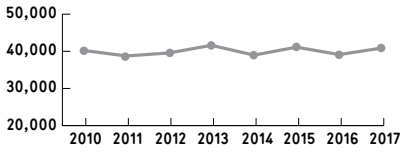
OBJECTIVE 01: By 2019, develop a long-term Climate and Energy Action Plan to achieve carbon neutrality by 2050, with interim milestones for 2025 and 2035.

STATS AND TRENDS:

40,877 Tonnes of GHG emissions

+4.5% Change from 2016

TOTAL EMISSIONS (TONNES CO^2-e)



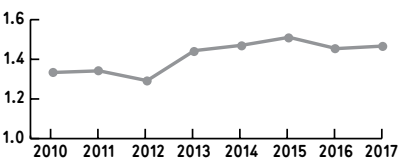
OBJECTIVE 02: Implement cost-effective and practical strategies to reduce or minimize growth in energy use on campus.

STATS AND TRENDS:

1.47 Gigajoules energy use per square metre

+0.9% Change from 2016

ENERGY INTENSITY (GJ/m_2)



Climate Change and Energy

Waterloo's carbon emissions increased slightly in 2017, driven primarily by continued growth of campus buildings and higher natural gas consumption.

Waterloo has seen a 17% reduction in emission intensity since 2010 on a per-square metre basis, though this was due in large part to the provincial phase out of coal power making electricity use far cleaner. The underlying drivers of energy use on campus have continued to increase, even on a per-square metre basis, by approximately 9% since 2010. Waterloo has formed a working group of the President's Advisory Committee on Environmental Sustainability to further develop an integrated Climate and Energy Action Plan. If Waterloo is to make advancements on reducing its carbon footprint, greater emphasis will need to be placed on implementing new cost-effective low-carbon technologies.

LIGHTING WITH LESS

In 2017, Plant Operations conducted lighting retrofit projects in the Davis Centre, Physical Activities Complex, and Math and Computers. These projects retrofitted old light fixtures with LED or high-efficiency fluorescent bulbs, reducing energy consumption and electricity costs. The PAC project also provides a better quality of light and greater control of lighting systems for major campus events such as convocation. These projects are estimated to save approximately $75,000 per year.

OUR IMPACT

Waterloo's efforts to improve campus energy efficiency and reduce emissions directly advance the targets and indicators of three of the UN Sustainable Development Goals:

Waste

Waterloo's waste diversion rate remained consistent in 2017, at 42%. The University had more recycling activity, but also created more garbage than in previous years. During the annual waste audit, staff found that over 80% of all garbage sent to the landfill could have been composted or recycled. Major efforts planned during 2018 and 2019 will help ensure that more of these materials are successfully sorted into the appropriate bins.

PROGRESS SNAPSHOT

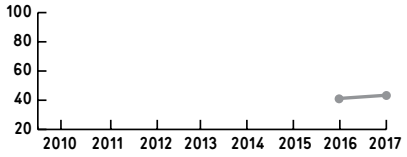
OBJECTIVE 03: By 2025, achieve a 60% diversion rate; by 2035, become a zero-waste campus (90% diversion rate).

STATS AND TRENDS:

42% waste diverted from landfill

3,232 Tonnes of waste sent to landfill

DIVERSION RATE (%)



STANDARDIZING THE WAY WE SORT

Waterloo recently approved its first set of guidelines for waste and recycling bins. The guidelines ensure that all new bins on campus have consistent design features, proper signage, effective colour coding, and use best practices to help students and employees sort waste. Plant Operations began planning to implement these standardized bins in all Food Service areas and in outdoor locations to make recycling easier.

LEARN WHAT GOES WHERE › *uwaterloo.ca/sustainability/waste*

TAKING AWAY TAKE-OUT WASTE

Food Services launched the Eco-Container program in Claudette Millar Hall. Students can purchase a reusable container for take-out food, and receive a 20 cent discount off their meal each time they use it. When they are done, students can exchange the containers for a token to receive a washed container at their next meal. Food Services does the dishes! The program will be expanded to REV and V1 residence cafeterias in 2018, and into the SLC expansion for public use once the building expansion is complete.

LEARN ABOUT THE ECO-CONTAINER › *uwaterloo.ca/food-services/eco-container*

EXPANDING E-WASTE COLLECTION

With funding from the Sustainability Action Fund, Sustainable Campus Initiative partnered with Central Stores to expand the University's electronic waste collection program. There are now three drop-off locations in the Davis Centre, Student Life Centre, and Village 1 where students and employees can drop off unwanted small e-waste such as ink and toner cartridges, cell phones, mice and keyboards, laptops, and computer peripherals. You can even bring empty pens and pencils! Waterloo also has separate drop-off stations for batteries. In 2017, Waterloo collected over 68 tonnes of e-waste and 4.6 tonnes of batteries!

SEE WHAT GOES IN E-WASTE › *uwaterloo.ca/sustainability/projects-and-initiatives/waste/sorting-guide*

ZEROING IN ON ZERO WASTE

In October 2017, Waterloo hosted its first ever Zero Waste Week to educate and get members of the community thinking about reducing their waste on campus. Events included:

- 300 completed an online quiz on how to sort waste
- 290 tried keeping all of their waste for one week contained to one mason jar
- Booths around campus tested students and employees' ability to sort common items into the correct bin in under 30 seconds
- Plant Operations created Garbage Mountain, stacking all garbage from one campus building onto the DC common during the week to visualize garbage use

REDUCE YOUR WASTE ON CAMPUS › *uwaterloo.ca/sustainability/waste*

OUR IMPACT

Waterloo's efforts to reduce waste on campus work directly towards the targets and indicators of three of the UN Sustainable Development Goals:

Water

Waterloo's water consumption decreased by over 39,000 metres cubed in 2017, representing a 7% total decrease. Since the campus was also growing at the same time, this represents an 8.3% decrease per square metre from the 2015 baseline, and a nearly 29% decrease since 2010. The University will need to maintain this result going forward.

PROGRESS SNAPSHOT

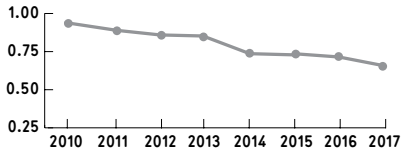
OBJECTIVE 04: By 2025, reduce water intensity by 5% per square metre from a 2015 baseline.

STATS AND TRENDS:

-8.3% Water use per square metre since 2015

0.67 Metres cubed water use per square metre

WATER USE (m^3 per m^2)



OBJECTIVE 05: By 2025, expand the deployment of stormwater management technologies to targeted areas.

STATS AND TRENDS:

3 Permeable pavement sites on campus

4 Green roofs

OUR IMPACT

Waterloo's water efficiency and stormwater management efforts works directly towards the targets and indicators of two of the UN Sustainable Development Goals:

Transportation

With over 30,000 students and employees travelling to the University on a regular basis, strengthening low-impact and sustainable transportation choices is important for Waterloo's campus and community impact.

PROGRESS SNAPSHOT

OBJECTIVE 06: By 2025, increase to 90% the proportion of sustainable commuting trips from a 2016 baseline of 85%.

STATS

-- Indicator on student and employee combined commuting forthcoming

47% Employee commuting trips by walking, cycling, carpooling, transit, or telework (2016)

OBJECTIVE 07: By 2020, increase electric and alternative-fuel vehicle use on campus.

-- Indicators forthcoming

3 Publically available EV charging stations

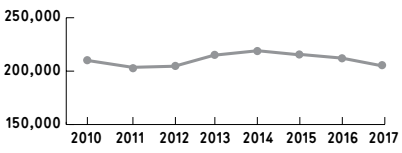
OBJECTIVE 08: By 2025, reduce fossil fuel consumption across the campus fleet by 25% from a 2015 baseline.

STATS

-5.1% Decrease in fleet fuel consumption since 2015

205,381 Litres fuel consumption

FLEET FUEL USE (LITRES)



PLUGGING INTO GREEN VEHICLES

Electric vehicles are increasingly on the radar of the University community. In Waterloo's 2016 travel survey, 61% of respondents said they would like to consider an electric vehicle during their next car purchase. To support EV use on campus and to connect with Waterloo research, the Waterloo Institute for Sustainable Energy funded the installation of three EV chargers on campus, located next to Engineering 6. These units have no additional cost for users, as long as they display a valid parking permit. They include a Tesla charger, a Level 2 charging station, and a Level 3 rapid-charger. Students and employees can check station availability and the charging progress of their vehicle using a smartphone app from the station vendor.

SEE THE CHARGING STATION DETAILS › *uwaterloo.ca/parking/new-ev-charging-policy*

INCREASING ACCESS TO BIKES

Need to get across campus in a hurry? Meeting someone in uptown Waterloo for lunch? Bike sharing is an easy way to get around without having to drive. In 2017, Waterloo piloted a bike share program on campus, where students and employees could rent out bikes for short-term trips using a smartphone app. With three stations and 15 bikes, the pilot supported over 2,600 kilometers of clean travel during the Fall 2017 term. The University is working with the City of Waterloo and all area municipalities to launch a community-wide program in the coming years.

In addition, FEDS continued to run its bike loan program through the Bike Centre, which provides students with access to bikes over the full term. No need to worry about buying and storing a bike during co-op terms! The bike loan program connects 40 students each term with high quality bikes to help them get to campus.

VISIT THE BIKE CENTRE AND BIKE LOAN › *feds.ca/feds-services/bike-centre*

CELEBRATING CYCLING

In June 2018, Waterloo launched its third annual Bike Month campaign to celebrate cycling as an affordable, healthy, and environmentally-friendly way of getting to campus. Nearly 400 students and employees stopped by the annual Bike Lunch for free food, a chance to meet local vendors supporting cycling, and for free bike tune-ups from King Street Cycles.

The month-long Bike Challenge also encouraged students and employees to log their cycling trips to campus, and recorded over 6,100 kilometers of reported cycling. Participants saved over $1,900 in fuel and travel costs, burned 190,000 calories, and avoided 1.4 tonnes of carbon dioxide emissions!

SEE CYCLING RESOURCES AT WATERLOO › *uwaterloo.ca/sustainability/projects-and-initiatives/transportation#BikeWalking*

ADDING WATERLOO'S FIRST HYBRID VEHICLE

Waterloo added its first hybrid vehicle to the campus fleet in 2017. The Central Stores team, which circulates mail, supplies, and deliveries across campus, was a natural fit for a vehicle that would reduce ongoing fuel costs. When it came time to replace one of their service vehicles, the department selected the Chrysler Pacifica Hybrid van. Running primarily on electric power, the van also has a backup fuel source to extend the range and ensure mail and freight arrive across campus on schedule.

READ THE NEWS STORY › *uwaterloo.ca/central-stores/news/central-stores-unveils-hybrid-service-vehicle*

OUR IMPACT

Waterloo's support for sustainable transportation works directly towards the targets and indicators of three of the UN Sustainable Development Goals:

Grounds

With over 1,100 acres of campus grounds, Waterloo is blessed with abundant natural areas and ecological assets. The Campus Master Plan seeks to preserve greenspace across campus, and students and employees have made many efforts to protect and restore natural areas on campus.

PROGRESS SNAPSHOT

OBJECTIVE 09: By 2025, all University grounds will be maintained according to sustainable landscaping standards, and plans developed for remediation and preservation of specific natural areas of concern.

STATS AND TRENDS:

-- Percent compliance with sustainable landscaping standard forthcoming

100% Grounds managed to integrated pest management principles

REINVIGORATING AN URBAN FOREST

In 2017, the Faculty of Environment received funding from TD Friends of the Environment for the transformation of a 5 hectare urban forest on Waterloo's main campus. The urban forest is an important nesting and foraging spot for many species, but also faces challenges from invasive species like European buckthorn.

The project envisions engaging students, faculty, and even community members in projects to monitor and track plant and animal species, and identify opportunities for remediation and management. It will function as a major living laboratory project, and be an opportunity to connect students and employees to nature.

LEARN ABOUT THE URBAN FOREST › *uwaterloo.ca/environment/news/uw-urban-forest-receives-seed-funding-td-friends-environment*

TEAMING UP TO TIDY UP

Despite efforts to collect and dispose of waste properly, wind and weather inevitably carry trash into Waterloo's natural areas. Over 40 student and staff volunteers teamed up to collect litter around campus as part of Waterloo's Earth Month activities in April 2017 and April 2018. Dozens of bags were collected and properly disposed of, with hotspots along the Laurel Creek, University Ave, and around the edges of campus forests. Supplies were provided by the City of Waterloo.

OUR IMPACT

Waterloo's efforts to sustainably manage its natural landscape works directly towards the targets and indicators of two of the UN Sustainable Development Goals:

Food

Each day, thousands of students and employees purchase and eat food at Waterloo. Food Services' efforts to support healthy and sustainable food choices have a large impact for members of the campus community, as well as for the farmers and communities who grow our food.

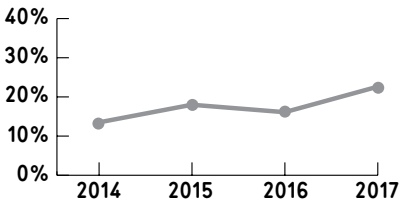
PROGRESS SNAPSHOT

OBJECTIVE 11: By 2025, 40% of all Food Services food and beverage purchases are produced on-site, locally, or are third-party certified for sustainability.

STATS AND TRENDS:

22.6% Of all food and beverage purchases are local, produced on-site, or third-party certified for sustainability

% OF PURCHASES MEETING OBJECTIVE



OBJECTIVE 08: By 2018, achieve and maintain a Fair Trade Campus designation.

STATS AND TRENDS:

— Receipt of Fair Trade Designation forthcoming

OBJECTIVE 08: By 2020, deliver multifaceted programming to grow student and employee awareness about healthy and sustainable food choices.

STATS AND TRENDS:

— Number of programs for student and employee food awareness forthcoming

Our stories

LEVERAGING LOCAL

Waterloo Region is blessed with an abundance of local food providers. Food Services continues to partner with local suppliers for many types of food, including cheeses, eggs, meats, apples, breads, and many types of produce. In 2017, Waterloo's local food purchases - defined as grown and processed within Ontario - made up almost 21% of all food and beverage purchases on campus, a 25% increase compared to 2016.

Food Services featured local ingredients and dishes in menu items across all residences in October as part of their Thanksgiving specials.

FLOURISHING AND FAIR TRADE

In 2017 and 2018, Food Services continued to integrate Fairtrade certified coffee, tea, and chocolate bars at all campus-run locations. Food Services added more signage to communicate the benefits of fair trade for farmers, communities, and ecosystems that produce tea, coffee, and cocoa, and joined the world's largest fair trade bake sale in September 2017, hosted by the Canadian Fair Trade Network. Delicious treats served across campus included fair trade chocolate chip banana bread and peanut butter cups with fair trade chocolate ganache.

EATING FRSH

Waterloo launched the FRSH food outlet in the new Applied Health Sciences expansion to make healthy and sustainable food options even more accessible. The location features mostly plant-based meal options to reduce the environmental impact of meat consumption, including made-to-order salads, rice and quinoa bowls, wraps and burritos, and smoothies and juices. Of course, all items are made with fresh ingredients!

In 2018, FRSH will be converting into a fully vegan and vegetarian food outlet.

OUR IMPACT

Waterloo's efforts to improve campus food systems directly advance the targets and indicators of six of the UN Sustainable Development Goals:

Procurement

As a major consumer of a variety of goods and services for day-to-day operations, Waterloo's product purchases have a large impact through its supply chain. Ensuring sustainable procurement practices can help reduce these impacts beyond Waterloo's borders and develop market opportunities for sustainably certified products.

PROGRESS SNAPSHOT

OBJECTIVE 012: By 2020, evaluate life cycle cost and require sustainability disclosure from suppliers for all purchasing decisions over $100,000.

STATS AND TRENDS:

-- Integration into procurement processes forthcoming

OBJECTIVE 013: By 2018, establish baseline data and targets to improve the percent of campus-wide purchases that meet third-party standards for paper, electronic equipment, and cleaning supplies.

STATS AND TRENDS:

92.1% Of all paper purchases have FSC certification and/or recycled content

43.4% Of all major electronics purchased are certified to EPEAT Bronze or higher

82.5% Of all janitorial cleaning and paper products have an environmental certification

Our stories

BASELINING WHAT WE BUY

In collaboration with Custodial Services, Procurement and Contract Services, Housing and Residences, and the Sustainability Office, Waterloo worked diligently with vendors and suppliers in 2018 to develop baselines and updates of sustainably sourced products from three major categories: electronic equipment, paper purchases, and janitorial cleaning and paper products. These are important categories due to their prevalence on campus and the existence of strong third-party sustainability certification frameworks. In both paper purchases and cleaning and janitorial purchases, over 80% of products purchased at Waterloo had an environmental certification.

- **Paper purchases:** uses recycled content or Forest Stewardship Council (FSC) certification, which ensures that paper is produced from responsibly managed forests that avoid deforestation and illegal logging.
- **Electronic equipment:** uses the benchmark Electronic Product Environmental Assessment Tool (EPEAT) certification, which evaluates the lifecycle impact of computers, printers, monitors, and other devices. The certification includes categories for resource extraction, manufacturing, energy consumption, and end-of-life disposal.
- **Cleaning and janitorial paper products:** covering all cleaning chemicals, sanitation products, and toilet paper or paper towels, this category uses the UL Ecologo, Green Seal, Greenguard, or FSC certifications to identify sustainable products.

OUR IMPACT

Waterloo's sustainable purchasing efforts directly support the targets and indicators for one of the UN Sustainable Development Goals.

ENGAGEMENT

Building a sustainable future begins with people. Waterloo's efforts to advance campus sustainability through education, research, and operations are founded on Waterloo's goal of embedding sustainability practices into campus culture.

This includes training students and employees about everyday sustainable actions, as well as providing leadership and development opportunities. And, since all students and employees are embedded in local neighbourhoods and communities, it involves mobilizing knowledge and engagement beyond the campus' borders.

PROGRESS SNAPSHOT

OBJECTIVE E1: By 2020, Waterloo broadly distributes timely and audience-relevant information about sustainability initiatives and opportunities within the campus community.

STATS

33,700	Unique page views on the sustainability website
3,791	Sustainability report views and downloads
4,782	Engagements on social media channels
3	Campus-wide engagement campaigns

OBJECTIVE E2: By 2020, additional programming is developed for incoming students during orientation and in residences to encourage sustainable living on campus.

STATS

--	Percent of first year students reached by sustainability programs

OBJECTIVE E3: By 2018, establish a sustainability leaders program in partnership with students from residences, clubs and societies, student government, and for students in off-campus housing.

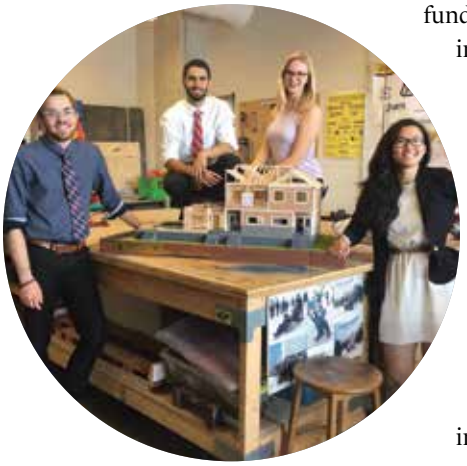
STATS

9	Student groups and clubs involved in the Sustainability Network

Students

SHARING PEER-TO-PEER

Students are the largest stakeholder constituency on campus, and peer-to-peer engagement is a critical way to encourage sustainable action. Sustainable Campus Initiative (SCI) is a FEDS service run by student volunteers to provide environmental services such as workshops, social events, performances, fundraisers, and ongoing operational improvements. Events run by SCI in 2017 include the ECOLOO fair, Earth Hour 2017, SCI Talks, and Sustainability Week. These engaged over 650 students.



LEARN MORE ABOUT SCI › *feds.ca/sustainability*

RACING TO ZERO ENERGY

In April 2018, Waterloo students from the Warrior Home design team won first place through the U.S. Department of Energy's Race to Zero design challenge in the "Attached Housing Contest." The Race to Zero competition requires students to develop innovative designs for cost-effective, zero energy buildings that tackle urgent issues like climate change while maintaining housing affordability. The Waterloo students partnered with Habitat for Humanity in the Waterloo Region for the design of a four unit townhome development project that met net-zero-energy requirements. It was the first entry of Warrior Home into the competition.

LEARN ABOUT WARRIOR HOME › *uwaterloo.ca/architectural-engineering/news/warrior-home-battles-it-out-first-place*

NETWORKING FOR IMPACT

In 2017, nine different student groups came together to form the Sustainability Network. As a forum to coordinate and build bridges between clubs and individuals with similar interests, the network encourages participants to co-promote related events, collaborate on projects, and share best practices. The network has had regular meetings throughout 2017 and 2018.

JOIN THE SUSTAINABILITY NETWORK › *uwaterloo.ca/sustainability/network*

Employees

PROGRESS SNAPSHOT

OBJECTIVE E4: By 2025, increase from 5% to 25% the proportion of university departments that are Green Office certified.

STATS

5% University departments achieving at least Green Office Bronze

GREEN OFFICES

How can employees take action in their departments? Waterloo's Green Office program supports individual departments to embed sustainability in tangible ways, either through communicating existing services, updating prompts and signage, and shifting processes. Each department has a dedicated ambassador or green team, and works through a common scorecard of suggested action items to initiate and track progress.

As of June 2018, there were 35 departments participating in the program, with over 60 ambassadors and representing approximately 1,400 employees. Departments receiving Green Office certificates include:

GREEN OFFICE GOLD CERTIFIED

Green Office Gold:

- Centre for Teaching Excellence

GREEN OFFICE

SEE ALL GREEN OFFICES › *uwaterloo.ca/sustainability/go*

GREEN OFFICE SILVER CERTIFIED

Green Office Silver:

- Dean of Engineering Office
- Dean of Environment Office
- Library
- President's Office
- Political Science
- WatCACE/WatPD

GREEN OFFICE BRONZE CERTIFIED

Green Office Bronze:

- AccessAbility Services
- Centre for Extended Learning
- Dean of Applied Health Sciences Office
- Dean of Math Office
- Faculty Association of UW
- Federation of Students
- Knowledge Integration
- Human Resources
- Registrar's Office
- Renison English Language Institute
- Student Success Office
- Water Institute
- Writing and Communication Centre

TRAINING EMPLOYEES

In 2018, Waterloo's Sustainability Office created a corporate training program for any employee on campus to learn about sustainability. The 7-part certificate introduces employees to core concepts around sustainability, including global issues, Waterloo's directions, resources on campus, and ways to integrate into everyday action. Twenty employees participated during the Winter 2018 pilot, and over 70 employees have participated during the inaugural Spring 2018 term.

TAKE THE CERTIFICATE › *uwaterloo.ca/sustainability/certificate*

Community

TRANSFORMING ENERGY IN WATERLOO REGION

In addition to major research on sustainable energy, Waterloo also works to mobilize its knowledge to advance conversations in the local community. Waterloo partnered with the Kitchener Public Library and PowerShiftWR to host a public lecture entitled Transforming Energy in Waterloo Region, where faculty experts highlighted the big shifts that can be expected locally to confront challenges of energy access and climate change. Over 140 community members filled the Kitchener Public Library auditorium to hear about technology advances, policy pathways, and social and behavioural advances that are evolving the energy system.

SEE THE LECTURE RECAP › *uwaterloo.ca/sustainability/news/facilitating-conversation-around-waterloo-regions-energy*

PROGRESS SNAPSHOT

OBJECTIVE E5: By 2020, Waterloo is recognized as a sustainability leader in Waterloo Region.

STATS

3 Local sustainability awards since 2016

12 Local non-academic community partnerships, memberships, board roles, or advisory involvement related to sustainability

ENERGIZING YOUTH

The Energize: Sustainable City Challenge is a resource for the community to think about innovative solutions to climate change and energy planning in Waterloo Region. It was created by the Sustainability Office in partnership with ClimateActionWR, Waterloo Global Science Initiative, the Waterloo Catholic District School Board, and Waterloo Science Outreach. The activity is simulation-styled and uses real-world data to help improve energy literacy, increase awareness of local greenhouse gas emissions and targets, brainstorm pathways to a sustainable, low-carbon future, and inspire action among participants. First piloted in Spring 2017, it has now engaged over 750 individuals, including students, policy planners, and community members across Waterloo Region, with a particular focus on youth events. Energize has been utilized at the CIGI Global Youth Form and as part of the Waterloo Wellington Science and Engineering Fair.

LEARN ABOUT ENERGIZE › *uwaterloo.ca/sustainability/about/partnerships*

RECEIVING RECOGNITION

Waterloo was honoured to receive the 2017 Sustainability Breakthrough Award from Sustainable Waterloo Region (SWR), a local non-profit that works with businesses to translate sustainability interest into action. Waterloo received the award for its development of Policy 53: Environmental Sustainability, release of its first Environmental Sustainability Strategy, and many of the efforts referenced here! The University is a member of several SWR programs, including the Regional Sustainability Initiative, TravelWise, evolv1, and ClimateActionWR.

SEE THE SWR AWARDS AND LOCAL ACTION › *sustainablewaterlooregion.ca*

OUR IMPACT

Waterloo's efforts to engage students, employees, and the community in sustainability action advances many of the UN Sustainable Development Goals, but in particular reinforces:

GOVERNANCE AND BENCHM

As the previous sections illustrate, sustainability action occurs across many areas of campus. These efforts are critical to changing behaviours, increasing involvement, building a culture that embraces sustainability, and developing sustainable infrastructure.

Waterloo is also establishing policies and practices to better integrate sustainability into institutional decision-making to support existing actions and address areas of opportunity.

PROGRESS SNAPSHOT

OBJECTIVE G1: By 2025, achieve and maintain a STARS Gold designation through the Association for the Advancement of Sustainability in Higher Education

STATS

--

Attainment of STARS Designation forthcoming

ARKING

FORMAL POLICIES, MEMBERSHIPS, PRACTICES, AND COMMITMENTS

Internal:

- Policy 53: Environmental Sustainability (new 2017)
- Environmental Sustainability Strategy (new 2017)
- Waste and recycling standard (new 2017)
- New buildings are designed to LEED Silver
- High efficiency lighting retrofits mandated during construction and renovation
- Eliminated use of chemical pesticides
- Centralized office printers defaulted to double-sided printing
- Campus Master Plan includes sustainability aspects as defining features of campus development

External:

- Member and host institution in collaboration with WGSI for Sustainable Development Solutions Network Canada (new 2018)
- Signatory to 2009 Council of Ontario Universities Pledge, Ontario Universities, Committed to a Greener World
- Signatory to 2017 Council of Ontario Universities commitment to design a roadmap to a low-carbon campus (new 2017)
- Member of the Regional Sustainability Initiative, managed by Sustainable Waterloo Region, and Bronze Pledging Partner for Waste (new 2017)
- Member of TravelWise, managed by the Region of Waterloo and Sustainable Waterloo Region
- Member of the Association for the Advancement of Sustainability in Higher Education

For full data and details on each objective and indicator, consult the Data and Details report, available at uwaterloo.ca/sustainability/2018reportdetails

Looking forward

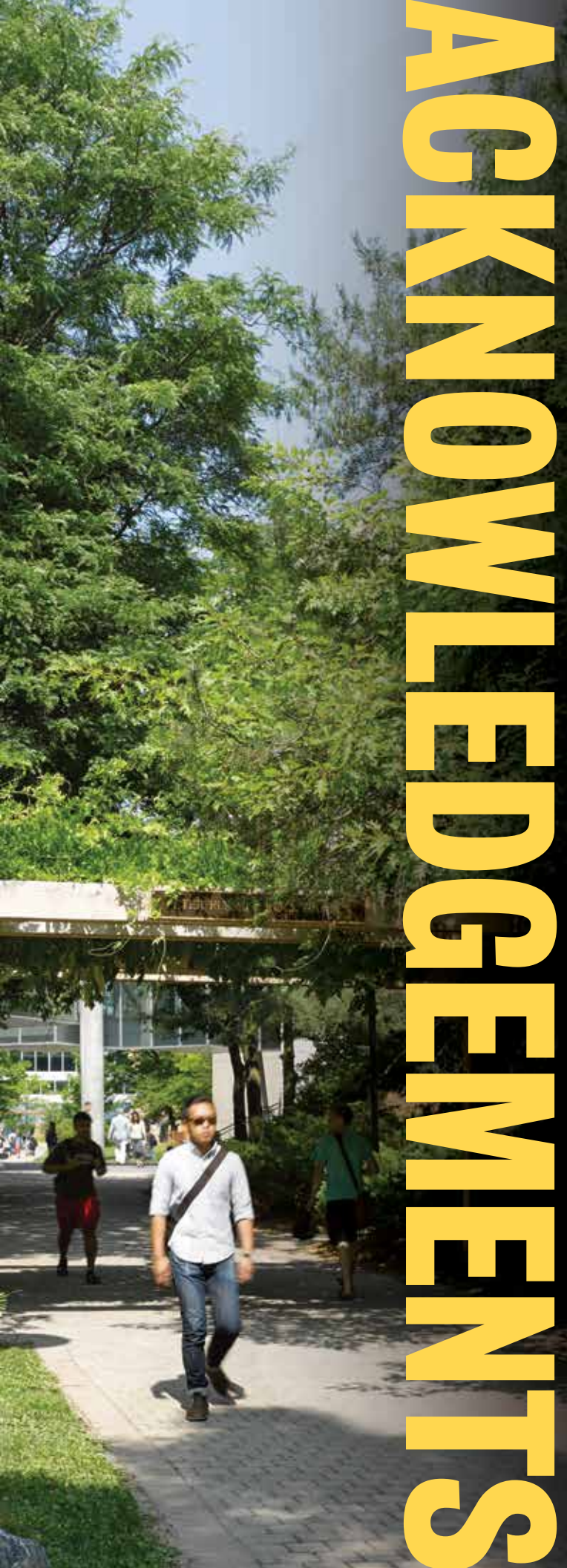
In less than a year since the Environmental Sustainability Strategy has been released, Waterloo has already made progress against many of the established objectives. Faculty, students, and staff from across campus are mobilizing action in their departments. This report highlights dozens of successful case studies, statistics, and positive trends.

However, it is important to acknowledge the areas where progress has been slower than expected. These will require renewed effort and attention to ensure completion of the objectives. In particular:

Climate and energy: As noted, Waterloo's energy intensity continues to increase, as do its related greenhouse gas emissions. Early efforts to develop a plan of action to reduce emissions and improve energy efficiency have not yet gained momentum and will require additional support and capacity.

Information delivery: Ongoing daily actions from students and employees are essential to progress for many aspects of campus sustainability, but information about proper practices, more sustainable options, or support programs already in place is not widely communicated. Greater effort must be made to highlight tangible choices individuals can make to advance sustainability, as close as possible to where those choices are made.

Data availability: Although this report synthesizes a large amount of information, most of these are lagging indicators that are only available weeks or months after the activity occurs. This means administrators are unable to track progress at a more granular level of detail and respond to changes in a timely manner, and that there is no meaningful feedback for individual or collective action. Identifying pilot projects to shorten the data collection process for administrators and to provide real-time or near-to-real-time feedback for campus users would enable better decision-making and shifts in behaviours.



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