DALHOUSIE UNIVERSITY | OFFICE OF SUSTAINABILITY

ANNUAL REPORT 2023-2024

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Students conducting biodiversity survey in the Shirreff Hall Pollinator Garden.

Vegetative bioswale outside of the Fitness Center.

DALHOUSIE UNIVERSITY | OFFICE OF SUSTAINABILITY

Overview

The Dalhousie University Office of Sustainability (OS) develops plans and policies, spearheads carbon reduction, renewable energy, waste management, sustainable transportation and natural environment projects, delivers education programs and events, involves students in on-campus projects, and provides advice on sustainability efforts to departments. The Office supports university-wide public sustainability reporting through sustainability data analytics for the submission to the Sustainability Tracking Assessment Rating System (STARS), QS Sustainability Ranking and Times Higher Education (THE) Impact Ranking.

This annual report highlights progress made on key operational sustainability efforts as identified in the University Sustainability Operations Plan. It includes processes and outcome indicators that denote how we approach the work and what results we are pursuing. Broader sustainability reporting on academics, research, human resources, additional operations indicators and community and student initiatives is included in international reporting efforts through programs like STARS.

Sustainability Manager Alexa Goodman hosts a Sustainable Events Certification Training.

Emera IDEA Building Tour hosted by outgoing ED, Rochelle Owen (right).

EV Charger outside the Steele Ocean Science Building.

Peer educator, Lindsay Redding, providing waste education to students in the Killam Library.

STUDENT ENGAGEMENT

Goal: Develop and implement new sustainability programs and initiatives across all campuses. Improve existing programs and online presence.

PROGRESS

- Over 50 students engaged with the OS through various means including independent research, coursework, volunteering and staff positions.
- Four students actively participated in the President's Advisory Council on Sustainability (PACS).
- Summer interns supported a variety of programs and projects including: solar photovoltaics, cycling infrastructure, sustainability planning, pollinator gardens, and behavioral programs.
- Peer educators organized events and workshops throughout the school year over thematic areas like Fair Trade, Cool Foods - plant based diets, and waste reduction, engaging over 550 students.
- Students from courses like Energy Pathways, Food Systems, and Campus as a Living Laboratory identified areas for increasing campus biodiversity and energy conservation, assessing food waste to improve dining service management, and improve sustainability employee training.
- The OS supported expanding biodiversity of green spaces across all four campuses.
- Students partnered with the OS to divert 2 tonnes of clothing and bedding from residences to local charities.

550 students

Engaged in events and workshops hosted by peer educators

2 tonnes

Of clothing and bedding collected from residences and donated to charities.

PROGRAMS & INITIATIVES

Goal: Develop and support sustainability operation initiatives across all campuses is at the core of the OS.

PROGRESS

- Ongoing social media promotion of programs, events and information using: Instagram, LinkedIn, emails and departmental website, which had 1855 viewers across 6436 visits spanning an average of 1 minute and 34 seconds reviewing content.
- Instagram is the most popular platform with 1,279 followers who are mostly 18-24 years old (43%) and 25-34 years old (38%).

1,279
Instagram followers

254
Employee Bus Pass participants

- Ongoing management and promotion of the Employee Bus Pass program, which had 254 employee participants last year.
- Second Green Labs Program Cohort engaged eight labs in learning sessions, and certified four labs. Measures take included: timers, educational information, and small lab equipment upgrades (e.g. fume hoods). Partnered with EHS to develop an optional sustainable labs self-assessment for all labs via Onsite which will roll out in the 24-25 fiscal year.

Paper making workshop for Ecolympics in Gerard Hall.

- Supported program development and coordination in residence through Ecolympics events and end-of-year material reuse and diversion. The OS began the planning for a campus Free Store using items diverted from residence move out.

896
Campus community members engaged

21
In-person and virtual presentations and seminars

- Presentations had international, national, local and campus audiences. Topics included: climate change infrastructure and adaptation, green labs, Fairtrade, food and waste management, campus sustainability, and energy efficiency.

OFF CAMPUS PARTNERSHIPS & FUNDING

Goal: Develop and support on-going networks, funding applications, and joint initiatives with community, government, and other external partners. This work supports our collective and University action.

PROGRESS

* The OS continues to contribute to the Atlantic Universities and Colleges Sustainability Network (AUCSN), a subcommittee of the Interuniversity Services Incorporated (ISI), and is a member of the Association for the Advancement of Sustainability in Higher Education (AASHE)

50

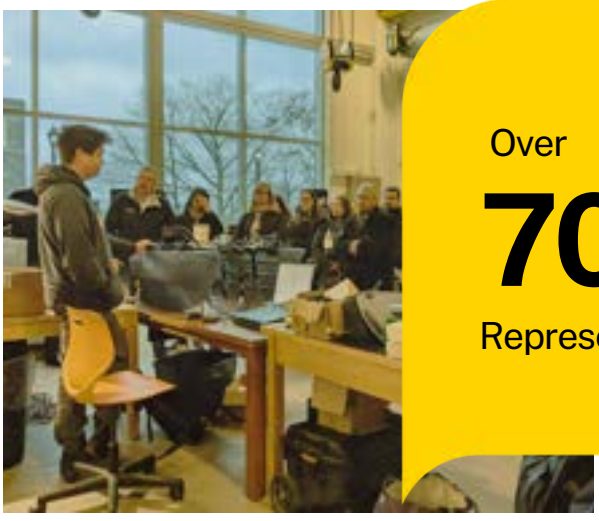
Networking session attendees

Attended a networking session hosted by the OS at the 2023 AASHE Conference for Canadian sustainability practitioners from various institutions, drawing participants with coast-to-coast-to-coast representation.

AASHE Networking Session in action.

* The Executive Director sits as an Atlantic Canadian representatives of the Northeast Campus Sustainability Consortium (NECSC),

* The OS was a leading member of the foundational partners team of the newly formed Building to Zero coalition in Nova Scotia.



Over

700

Representatives

Attended tours, engaged at conference booths, and participated in sessions on climate change resiliency and sustainable labs program at the Sustainable Labs Canada (SLCan) Conference, solar projects at Dalhousie, and carbon emissions reductions presentations.

Chemical Oceanography Lab glider demonstration during SLCan tour.

FINANCIAL HIGHLIGHTS

PROGRESS

In the 2023-2024 fiscal year, the approximate value of external funding (cash and in-kind) included:

- The OS is part of a collective of its peers from nine NS post-secondary institutions that received $157,000 in financial support from the McConnell Foundation.

  Support is for consulting services to assist in the purchasing of new renewable electricity and to create a case study for sharing across the country. Funding will also be used to support student(s).

- Other energy and GHG emissions projects brought in just over $150,000.

$157K
McConnell Foundation Grant

$150K
Energy and GHG Emissions Reductions Project Funding

Surface of Sexton geo-thermal field.

Siobhan Smith, Accessibility Planner, measuring bathroom width for wheelchair accessibility. Dalhousie Credit.

SUPPORTING EQUITY, DIVERSITY, INCLUSION AND ACCESSIBILITY (EDIA)

Goal: Support institutional EDIA efforts by increasing knowledge of the OS team, integrating themes into programming, evaluating and identifing issues and opportunities.

PROGRESS

- Co-led a Strategic Initiative Project with Facilities Management to update active transportation and landscape design guidelines to include accessibility parameters (photo above).
- Hires included representation from BIPOC and underrepresented communities (i.e. ethnic minorities).
- EDIA training was assessed for further integration into OS operations.
- Indigenous student artist worked with the OS to create a unique pollinator logo for our Pollinator Program.
- Clean Foundation's Clean Leadership Program provided funding to hire a student from an underrepresented group to join our Peer Education team for a summer internship.

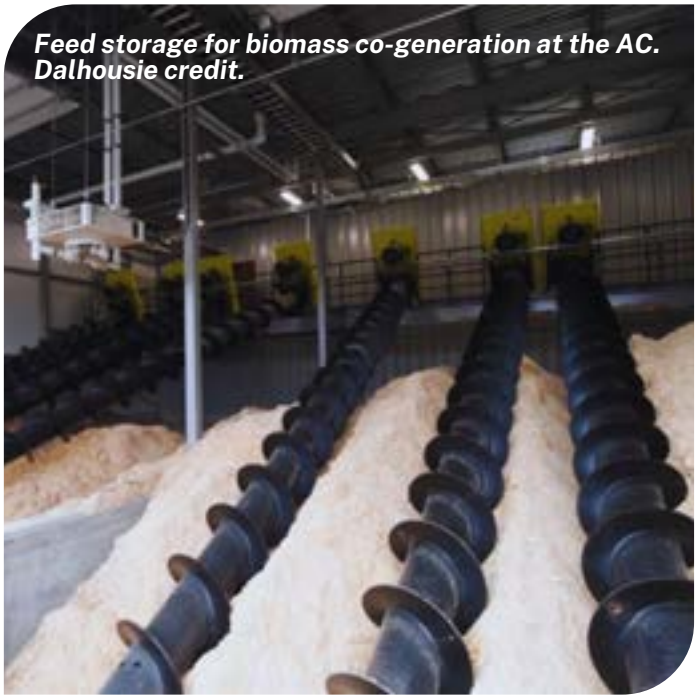
Sorting waste at a four-bin waste station. Dalhousie Credit.

WASTE MANAGEMENT

Goal 1: Increased diversion of solid, liquid, and hazardous waste from landfill disposal.
Target 1: 75% diversion from landfill by 2030.
Baseline: 2012 - 60% diversion from landfill; 2020 - 65% diversion from landfill.

Active Programs: Ongoing waste avoidance, reuse, and recycling programs including surplus goods; residence move-out programs; organics, fiber, recyclables, metal, construction and demolition, electronics, appliances, bulb and battery recycling programs offered by Facilities Management. Updates to waste signage, education, and additional a focus on waste in the laboratory environment.

Progress: 58% waste diversion rate (70% if wood ash is included. Wood ash from the AC is used for food fertilizer at a local farm). This is a 2% decrease since baseline year.



Feed storage for biomass co-generation at the AC. Dalhousie credit.

58%
Waste diversion

70%
If wood ash from the AC is included, which is used as farm fertilizer

Offloading garbage into the compactors at the Studley warehouse.

46 kgs/person
in Halifax

2 kg reduction
per person since last year

Goal 2: Minimize waste generation (includes data from all streams including recyclables, paper and cardboard, organics including food waste, landfill, construction and demolition, universal waste including electronics, biomedical and hazardous); reduce the quantity of purchased materials being disposed of.
Target 2: Increase reduction in waste generated each year over baseline period.
Baseline: 2013 - 85 kgs waste generated/person/year (Halifax); 2020 - 79 kgs waste generated/person/year (Halifax)*

Active Programs: Reduction programs impacting total waste generation include online services and teaching reducing paper and a roughly 10 to 15% increase in people working from home. Other initiatives include pre- and post- food waste initiatives, reduction of disposable packaging in food services, some lab recycling, and waste handling system changes that have resulted in a reduction of illegal dumping, plastic bags used in waste containers and construction and demolition waste.

Students sorting items from residence move out.

Progress: 46 kgs generated/person (Halifax) (45% reduction since baseline year).

*AC data are estimations from hauler and lacks accuracy. There are also research activities such as greenhouse organic waste driving up weights per person (182 kgs per person). Compared to Halifax data which is mostly measured weights. Halifax Campuses represent 99% of the campus population.

ENERGY & WATER

Goal: Reduce electricity, fuel, water, and materials consumption

Targets: Electricity and fuel - Hold growth and reduce consumption; Water – 70% reduction from baseline year.

Baselines:

- Electricity: 2010 - 80,265 MWh (4 MWh per person); 2020 - 77,771 MWh (4 MWh per person)
- Fuels: 2010 - 190,000 MWhe (10 MWh per person); 2020 - 155,208 MWhe (7 MWh per person)
- Water: 2010 - 1,200,800 m3 (62 m3 per person); 2020 - 461,868 m3 (22 m3 per person)

PROGRESS

Electricity

5% reduction
76,474 MWh

20% per person reduction
3.2 MWh /person

Fuels

28% reduction
136,699 MWh
weather normalized

43% per person reduction
5.7 MWh /person

Water

61% reduction
469,878 m3

68% per person reduction
20m3 /person

Active Programs: Each year several projects are in the planning, implementation or final measurement and verification stage to reduce electricity, fuel and water consumption. Projects in the planning phase include assessment of using waste heat for heating campus buildings at Halifax campuses, Chemistry Building lighting upgrades, Life Sciences Centre recommissioning, and solar photovoltaics (PV) buildings assessment.

Projects moving into or in the implementation stage include expanding the geo-exchange system at Sexton, Killam Library deep energy retrofit, replacement of the electric vehicle charging stations in the Dalplex parking lot, Arts Centre new and existing HVAC updates and solar PV, Dentistry recommissioning, Jenkins Hall heat pump installation and other lighting and recommissioning projects.

Several projects are in the final stages, or the measurement and verification stage the installation of variable frequency drive (VFD) controls on pumps in the Arts Centre and LSC, high efficiency pumping at Sexton campus, and ongoing commissioning. Through our energy management information system (EMIS) we identify ongoing opportunities and issues.

Note: All reductions are measured against the baseline year (2010).

GREENHOUSE GAS (GHG) EMISSIONS

Goal: Reduce GHG emissions and implement climate adaptation strategies.
Targets (Scope 1 and 2): 30% reduction by 2025 from baseline; 55% reduction by 2030; 80% reduction by 2040; net-zero before 2050.
Baseline GHGs (Scope 1 and 2): 2010: 106,178 tC02e and 6.52 tC02e per person.

PROGRESS

46% reduction
57,508 tCO2e

57% per person reduction
2.8 tCO2e/person

Active Programs: Climate action strategies are always in the planning and implementation stages as highlighted in the energy and materials reduction sections of this report. Energy consumption and types account for Scope 1 and 2 emissions of fleet, refrigerants, fuel and purchased energy sources (electricity) for heating and cooling. Scope three emissions of commuting, water use, and materials are also highlighted.

Key strategies being worked on are power purchase options for renewable electricity, energy and water efficiency projects including steam to hot-water conversions, high performance buildings, and climate adaptation. Annual greenhouse gas inventory report is published to show progress.

RENEWABLE ENERGY

Goal: Increase renewable energy supply on and off campus.
Targets: 2020 - 20%; 2030 - 90%-100 for electricity through off and onsite purchases.
Baseline: 2010 - 0% renewable energy on campus;

PROGRESS

Active Programs: Currently the University has nine solar installations, a geo-exchange field, and uses sawmill waste for creating heat and electricity. A new solar installation at the Arts Centre is being commissioned. Work is underway to prepare for participation in the Province's Green Choice Program which will enable customers like Dalhousie to purchase renewable electricity in Nova Scotia. The OS is also actively working on studies and financing for more solar, expansion of the geo-exchange at Sexton and more installations.

5% onsite renewable energy
20% including both on and off campus supply

Photo: Solar PV array on Art Center.

Sustainable commuters. Canva.

SUSTAINABLE TRANSPORTATION

Goal: Increased travel (commuting and business) through sustainable modes.
Targets: 2020 – 80% of commuting trips made by walking, cycling, transit, carpooling, or remote work; 2030 target - 85% of trips made using sustainable modes of transit.
Baseline: 2010 - 66% of commuting trips made by walking, cycling, transit, carpooling, or remote work.

Active Programs: Several annual programs and assessments are run by the OS and partners including the employee bus program (in partnership with HRM), safe cycling sessions, active transportation planning, annual commuter survey, efficient and low emission vehicle use education. In addition to these initiatives, designs and costs for fleet electric campus chargers were completed along with additional ideas around reducing, right sizing and procurement of fleet.

PROGRESS

81%

Dal community members use sustainable transit for commuting to/from Halifax campuses

49%

AC community members use sustainable transit for commuting to/from the AC

15%

Off campus work/study (combination of remote and hybrid) Baseline estimate 5%

Dalhousie University Commuter Survey

SUSTAINABLE TRANSPORTATION SUMMARY

2023-2024

Data is sourced from annual sustainability survcey, DalTrac reports, and commuter emissions data.

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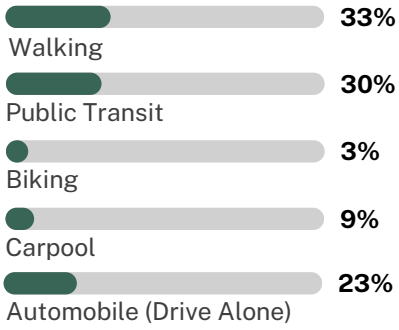
How does our community commute to and from Dalhousie?



81%

Use Sustainable Transport

On Halifax campuses and 49% on Agriculture campus.

All campus transportation methods, excluding single-occupancy vehicles, are considered sustainable.

How do people travel between Halifax campuses?

62%

Prefer Walking

As the primary option for travelling between campuses in Halifax, including Studley, Carleton, Sexton, and off-campus health facilities.

How can Dalhousie increase engagement in sustainable transportation?

Respondents were asked how Dalhousie could better engage the campus in sustainability; their feedback informed recommendations on sustainable transportation.

Cycling

Expand bike infrastructure, including more bike racks, covered shelters and, dedicated bike lanes.

Public Transit

Continue collaborating with Halifax Transit and the Halifax Regional Municipality to enhance and expand bus services, while diversifying membership options.

Our Progress: Reflections on Campus Transportation Improvements

Secure Bike Parking Access (SPAs)

The Office of Sustainability offers five secure indoor bike parking areas, accessible exclusively to registered users.

Growth in Public Transit Use

Public transportation use among the Dalhousie community has risen by 10% over the past 15 years. Numerous bus routes run directly through the Carleton, Sexton, and Studley campuses.

Discover more about the programs, projects, and accomplishments of Dalhousie's Office of Sustainability, and access the full transportation report on our website.

Bee enjoying a flowering plant on the IDEA green roof.

NATURAL ENVIRONMENT

Goal: Increase campus biodiversity and maintain and increase natural spaces.

PROGRESS

Indigenous pollinator garden tour.

- Dalhousie received Bee City Campus designation in December 2023, and the OS mobilized a Pollinator Committee to guide an intern-led GIS mapping project of natural habitats across all four campuses. This work culminated in the launch of our Pollinator Program webpage, which now features these detailed habitat maps.
- Biodiversity Week featured a range of events, including an Arts Centre interpretation of the Pollinator Garden, a garden walk with Facilities Management grounds staff, pollinator garden surveys, and biodiversity plantings.
- In the summer of 2023, honors student Emily McLean led a project planting an ecosystem triangle bed, featuring asters, and bayberry. Emily also secured World Wildlife Foundation (WWF) and Dalhousie Student Union Sustainability Office (DSUOS) funding to add another bed to the Shirreff Hall Garden and a serviceberry tree on the Carleton Campus, with installation planned for 2024-25.

Emily McLean next to one of the garden beds.

Students planting iwoodland poppies and pearly everlasting in the Shirreff Hall Garden.

GREEN BUILDINGS

Goal: Buildings achieve high performance green building standards.

Active Programs: New buildings strive to achieve comprehensive green building certifications such as LEED Gold or higher and may also pursue specific certifications related to carbon and energy. Buildings will be built towards evolving net-zero standards and meet and beat codes and regulations. Existing building upgrades follow high performance buildings standards.

PROGRESS

- Art Center addition was completed and achieved LEED Gold.
- The Emera IDEA and Richard Murray Design buildings achieved LEED Platinum certification, the highest possible LEED classification. There are only four LEED Platinum buildings at universities across all of Canada – and Dalhousie has two of them.

Emera IDEA Building entrance. John Tattrie.

POLLUTION

Goal: Reduce air, water, and land pollution.

Active Programs: The release of air, water (fresh and marine), and land contaminants is assessed through regulatory reporting, audits, and assessments. Reducing and switching energy sources helps reduce pollutants along with preventative maintenance of pollution control devices, education, litter clean-up, and proper management of materials such as chemicals. Each year, action will be taken to focus on contaminant reduction.

PROGRESS

- Through the many energy efficiency projects being completed across our campuses, we are reducing fossil fuel consumption and, as a result, reducing air pollutants.


Artistic rendering of reducing air pollution. Canva.

Plant based foods. Canva.

SUSTAINABLE FOOD SYSTEMS

Goal: Transition to more plant-based food offerings.

Active Programs: Ongoing programs and plant-based food offerings are provided in catering, vending and dining hall. Vegan and vegetarian options are made available including standing items in dining hall. Current reporting metrics use dollars spent on food to track plant-based food purchases. Other assessments are being examined including by plate, sales, weight or volume.

PROGRESS

25%

of purchases made by Food Services are on plant-based foods.

SUSTAINABLE PROCURMENT

Goal: Increase sustainably and ethically sourced products.

Active Programs: Each year, commodity work is being done to increase sustainable and ethically sourced products such as food, travel/fleet, IT/Telecom/AV, stationary, textiles, appliances, professional services, furniture, custodial, energy/water, building/supplies. OS is connecting with procurement on new strategies and system opportunities. Current work is being done on greening the fleet.

PROGRESS

- Dalhousie was designated as a Fairtrade Campus in February 2024, offering ethically sourced coffee, tea and chocolate in all meal halls, food retail, vending machines, and catering services, where applicable. Fairtrade ensure equity throughout the supply chain. Achieving this designation was a united effort with Food Services, Catering, Aramark and Chartwells.

Outgoing Sustainability Manager, Kareina Cadel hosting a Fairtrade tasting event in Howe Hall.

As a Fairtrade Campus, Dalhousie is committee to educating our community about the benefits of Fairtrade, celebrating our commitment during Fairtrade Month (October) and expanding our offerings.

LOOKING AHEAD

A New Chapter for Sustainability at Dalhousie

As we reflect on the past year, we acknowledge the significant change in leadership within the Office of Sustainability. After 16 years of dedicated service, Rochelle Owen stepped down from her position. Rochelle was instrumental in advancing many large scale energy projects across Dal's campuses and has left a lasting legacy that continues to shape our work. Her commitment to sustainability has laid a strong foundation that we are proud to build upon.

Rochelle Owen speaking at an event. Dalhousie Credit.

In January 2024. we welcomed new leadership with Stephanie MacPhee, as the new OS Executive Director. A proud Dalhousie alumnus, Stephanie brings a deep passion for carbon reduction, waste diversion, and enhancing student programs. Her vision will guide the office as we continue our efforts to drive sustainability across the institution.

Stephanie MacPhee atop the Emera Idea Building. Nick Pierce Credit.

Looking ahead to the 2024-2025 fiscal year, our focus remains continuing to reduce our campus' carbon footprint, building sustainable, low carbon buildings and advancing sustainability across all areas of our campus.

As we pursue these goals, we remain committed to improving Equity, Diversity, Inclusion, and Accessibility (EDIA) within our initiatives, while also honoring the rich cultural history of Mi'kma'ki. We are actively working to better integrate local and traditional knowledge into our sustainability efforts, ensuring that we approach our work with respect for the land and its original stewards.

As we move forward into this new chapter, we remain steadfast in our mission to create a more sustainable and inclusive future for Dalhousie University and beyond.

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