ZERO WASTE PLAN[1]

Committee Membership

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Membership:

- Akira De Carlos (Sustainability Coordinator, CSU)Andale Evans (Custodial Supervisor, Facilities Management)
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- Stephanie Bradley (Architectural Technician, Project Management, Facilities Management)

Our Vision for 2040

Concordia, through its Zero Waste Concordia Program (ZWC Program or ZWCP) will prioritize initiatives based on their alignment with key strategies of the program and measurable effectiveness towards **waste diversion** and **waste reduction** (per full-time equivalent (FTE), compared to a baseline of 2014-2015). **Upstream interventions**, such as purchasing policies and reuse initiatives, will be preferred to **downstream interventions** such as waste bin design, although both will be pursued. Construction and renovation waste will be measured and a separate objective will be set, since it has never been assessed comprehensively before. At every stage, the ZWC Program will foster a holistic, participative approach to waste management that increases community buy-in and experiential learning opportunities.

By 2040, Concordia will aim to achieve, through a dynamic, integrated, engaged Zero Waste Concordia Program:

- 90% diversion of material waste from landfill through compost, recycling, and material reuse
- 50% reduction of total material waste (per full-time equivalent) through programs that encourage low-waste purchasing and materials reuse

[1] Note that titles reflect members' designated roles at the time of their work on the committee.

Current Situation At Concordia

History

Concordia staff, faculty, and students have long been conscious of issues related to waste and material life cycles; as far back as the early 90s, Concordia had established a Recycling Committee to conduct **waste audits** and implement a recycling program. Since then, administrative departments and student groups have initiated over 30 projects to reduce and divert waste (according to a recent Sustainability Mapping Initiative conducted by Environmental Health and Safety and the Sustainability Action Fund). Efficient management of residual materials on campus is increasingly a concern due to budgetary compressions and prioritizing the delivery of a high quality of user-centric services.

Some **waste diversion** initiatives have moved from informal programs, often initiated by students, towards institutionalized programs managed by departments like custodial services (in the case of recycling and composting) and Property Management (in the case of the Concordia University Centre for Creative Reuse and Food Cycle).

A harmonized vision with formal targets will allow for prioritizing the development of effective initiatives, from pilot stage through to a mature, integrated stage. Better measurement and effective initiatives will allow the Zero Waste Concordia program to significantly increase yearly **waste diversion** figures from the current rate of approximately 35% and will additionally reduce the total waste from the current 1,300 metric tonnes per year.

Upcoming provincial and federal legislation around Greenhouse Gas Emissions and Waste Disposal necessitate a proactive mitigation of potential penalties and taxes. Additionally, there are strong messages from the city signaling that Montreal-level policies on disposable plastics will be implemented in the near future.

Progress to Date

Since the inception of the Zero Waste Concordia Program through Facilities Management in 2017, an initial plan was developed in consultation with just over 100 stakeholders identified for the program. Forty of these were surveyed to generate specific objectives and approaches, which demonstrated a desire from the key stakeholders to set ambitious objectives, to act quickly, and to adopt a name for the program that clearly demonstrated that commitment.

Additionaly, it was determined that a prioritization scheme would help reach these objectives by ensuring that resources were allocated to initiatives that demonstrated their effectiveness in reaching the objectives of the program. The ZWC prioritization score sheet, which allocates points for quantitatve criteria like **waste reduction**, **diversion**, awareness raising, living laboratory opportunities, as well as for qualitiative criteria like innovation and planning for continuity, was created to allocate points to guide decision-making on which initiatives to support. A first round of call-outs for submissions, as well as a list of initiatives generated by internal stakeholders, yielded a preliminary list of ranked initiatives, of which the following were the highest ranked:

- Concordia University Centre for Creative Reuse (CUCCR) expansion
- Waste Station upgrades

- Food Services and Tenant Waste initiatives
- Event Waste
- Materials Sorting Centre
- Low Waste Office

Based on this ranking, a plan was proposed for the period of 5 years from 2018-2023. Among these initiatives, much progress has been made. Funding was secured for the expansion of the Centre for Creative Reuse to relocate to Grey Nuns and to include furniture **upcycling**, a tool library, and residence move-out **waste diversion**. To date, **CUCCR** (the reuse centre) has engaged 2,735 members, diverted over 18 metric tonnes of waste, and saved community members an estimated $172,000. The initiative has also hybridized with the Asset Management program, based out of the Office of the Treasurer, to maximize value of moveable assets such as furniture by inventorying and guiding requests for used items, diverting over 30 metric tonnes of waste diverted in the first pilot year of implementation.

Additionally, funding was granted from Concordia's capital funds to purchase a first round of high capacity waste stations for high-traffic areas to curb the problem of overflowing waste bins and to yield the additional benefits of reducing servicing costs and providing key information to office occupants on how to properly sort waste at Concordia. The Low Waste Office initiative, which replaces desk-side trash bins with personal self-service bins and provides centralized access to compost in all offices (thereby increasing **waste diversion** in those spaces by an estimated 80%), has been implemented in nearly all SGW offices, and 90% of offices at Loyola. Remaining offices will be completed upon return to campus. Through this project, thousands of unnecessary trash bins have been removed and will be sold at a pay-what-you can rate or donated for reuse purposes.

Other successes include moving to a compost-only dining hall model on both campuses, as well as the increased use of customized signage in Food Service locations and at events, based on the type of items disposed of on site.

Parallel to the development of these internal initiatives, student groups have been making great strides in contributing to **waste diversion**. The **Waste Not Want Not** compost collaboration has successfully reached out to thousands of community members on how and where to compost. In tandem with an increase of compost bins from around 15 to over 200 on both campuses, compost collection has more than doubled from around 40 metric tonnes per year to 100 metric tonnes per year in 2018-2019. The Dish Project, which provides no-cost reusable dishware to community members, has greatly increased the number of items lent out since its inception in 2004.

Concordia's first Zero Waste Challenge in 2018 engaged over 100 community members toward a common goal: trying not to produce any non-recyclable or non-compostable waste. The Zero Waste Challenge is organized in partnership between the Dish Project, Sustainable Concordia, and the Zero Waste Concordia program.

Finally, an initiative spearheaded by a student passionate about connecting leftover food with those in need has been integrated into the Zero Waste Program. The project has expanded Hospitality Concordia's existing partnership with Tablee des Chefs, normally targeting large-scale events, to offer collection of leftovers at any size event. Such partnerships continue to be key to the successful growth of the program.

Five-year Targets and Strategies

2020-2025 | EXPLORE INNOVATIVE SOLUTIONS TO WASTE REDUCTION & DIVERSION

Nudge **waste reduction** and **diversion** performance beyond best practices and foster an innovative, curriculum and research-integrated program

Strategy 1	Sorting Centre & Local Materials Economy: Perform feasibility study and launch pilot phase of a centralized operation to safely sort materials into high-quality streams and make the materials available for use on and off-campus. A sorting centre would be used to separate landfill and recycling waste streams into clean, high-value individual material streams to encourage a circular economy of plastics, composites, fabrics, and other materials. For example, certain plastics could be reformulated into 3D printing materials through the Concordia Precious Plastics Project. Operating models using automation, AI-based sorting technology, and social integration staffing will be explored.
Strategy 2	Zero Waste Financial Incentives / Initiative Support Model: Explore strong financial incentives to reduce and divert waste, and launch pilot program with tenants

2020-2025 | UPSTREAM INTERVENTIONS & CIRCULAR ECONOMY

Continue to support and expand reuse initiatives and create procurement policies & procedures favoring **waste reduction** and reuse

Strategy 3	Zero Waste Purchasing: Encourage vendors with life cycle analysis assessments, **take-back programs** (**Extended Producer Responsibility, EPR**), equipment loan programs, low or no packaging, sustainable and local materials. Examine major university-wide or departmental procurements and investigate best practices for waste reduction relating to each. Provide education sessions to departments on best practices in zero waste procurement and customized recommendations based on their purchasing patterns. Restrict non-reusable, non-recyclable, and non-compostable materials. (Climate Strategy 4)
Strategy 4	Sustainable Asset Management: Implement clear procedures for sustainable asset management from the purchasing phase to the disposal phase, and consider ways to facilitate asset sharing (Research Strategy 14)
Strategy 5	E-waste Reuse: Explore avenues for offering non-reusable e-waste for parts to the community without compromising data and security
Strategy 6	Zero Waste Policies: Consider the amendment of our Sustainability Policy to include a section on Zero Waste that encourages and restricts activities that have a critical impact on waste (ex: restrict **plastic number 6**, bottled water sales, hazardous materials). Encourage units, faculties, and student associations and groups to adopt Zero Waste Policies. (Food Strategy 4)
Strategy 7	Zero Waste Procedures: Create Property Management level procedures on waste

	management to align with Zero Waste objectives, LEED O+M, and BOMA Best requirements (Climate Strategy 2)
Strategy 8	**Zero Waste Coffee / Beverages:** Explore container-share programs, bottle-less beverage vending machines, effective bring-your-own-mug incentive structures, and comprehensive, effective communication measures in order to reduce beverage waste on campus (Food Strategies 4, 11)

2020-2025 | WASTE MANAGEMENT BEST PRACTICES

Bring waste performance to a competitive level), based on comparison with top-performing universities, by continuing to implement best practice initiatives

Strategy 9	**Zero Waste Offices:** Continue standardization of Low Waste Office configuration (replacement of desk-side trash bins with personal sorting bins, providing access to compost) for all existing and new office spaces, and increase office waste education and engagement initiatives. Continue building on the momentum of the initiative to engage staff, faculty, and students in office spaces to further reduce / divert waste. Re-establish tie-in with the Sustainability Ambassadors program. Clarify procedures for waste with "Zero Waste Concordia Procedures" document and presentations to offices, including how to manage e-waste, recycling FAQs, how to sustainably dispose of furniture and other assets, etc. (Climate Strategy 9)
Strategy 10	**Zero Waste Food Service & Tenants:** Enact timeline for tenants to implement **pre-consumer** and **post-consumer** compost and recycling collection, encourage low-waste facilities in space plans (washing facilities, eating in-place options), and participation in food donation programs (Food Strategy 13)
Strategy 11	**Zero Waste Culture Change:** Establish metric-based targets with the objective of creating and sustaining "Zero Waste Culture" at Concordia. Work with Institutional Planning and Analysis Office and the Campus Sustainability Engagement Committee to survey the community on key indicators of zero waste behaviors. Use a market-based approach to create appropriate targeted outreach programming. Continue to partner with on-campus and off-campus groups to promote and implement the campaign.
Strategy 12	**Zero Waste Events:** Standardize compost bin availability at all event venues and provide training to event coordinators, caterers, event space administrators, and custodial staff on zero waste event management. Encourage groups to adopt policies to exclude non-recyclable/non-compostable packaging while promoting reusable alternatives like the Dish Project. Encourage use of Sustainable Event certification by key stakeholders. Support the integration of volunteer waste-sorting and food leftover donation assistance into University operations. Encourage bottle-free beverage infrastructure and policies in event spaces. (Food Strategies 3, 4, 13) (Research strategy 17)
Strategy 13	**Zero Waste Labs:** Identify opportunities to reduce and divert research and teaching laboratory waste with Environmental Health and Safety, the Teaching, Learning and Research Sustainability (TLRS) sub-committee and other key stakeholders (Research Strategy 14)

Strategy 14	**Zero Waste Renovation / Construction / Deconstruction:** Assess integration of Zero Waste principles into general conditions of construction and renovation contracts, provide benefits to contractors who perform deconstruction, and require strict tracking of **waste diversion**. Create tie-in with local materials economy. (Climate Strategy 2)

2020-2025 | PROGRESS MEASUREMENT PLAN

A	**Waste Auditing, Transparency, and Digitization:** Commission external companies to perform our **waste audits** in order to improve accountability and transparency, and explore options for transparently and frequently updating waste data through digital platforms
B	**Culture Change Tracking –** use surveying and engagement indicators such as social media engagement and stakeholder tracking tools to ensure that key understanding of waste issues, objectives, initiatives, and behaviors are adopted by the Concordia community. Set targets and track partnerships with departments, clubs, and other organizations on campus.
C	**Best Practices Tracking –** Track number of Zero Waste Offices, Events, Labs, Tenants, ratio of compost/recycling bins to trash bins, and updated signage. Conduct regular scheduled assessments of waste facilities in each building.

Appendix A. Information table

Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
EXPLORE INNOVATIVE SOLUTIONS TO WASTE REDUCTION & DIVERSION	1	Sorting Centre & Local Materials Economy	Property Management (Prop Mgmt) / Custodial Services / CUCCR	Assessment in progress	2022-2023
	2	Zero Waste Financial Incentives / Initiative Support Model	Prop Mgmt / Custodial Services / Legal	To be assessed	2024-2025
UPSTREAM INTERVENTIONS & CIRCULAR ECONOMY	3	Zero Waste Purchasing	Procurement / Prop Mgmt / Facilities Planning / Project Management Office	In progress	2020-2021
	4	Sustainable Asset Management	Office of the Treasurer / Prop. Mgmt / Faculty Facilities Managers	Pilot In progress	2021-2022
	5	E-waste Reuse	IITS / Prop Mgmt	To be assessed	2022-2023
	6	Zero Waste Policies	Prop Mgmt / Facilities Planning / Procurement / Hospitality / CSU / Student Associations / Legal	To be assessed	2023-2023
	7	Zero Waste Procedures	Prop Mgmt / Custodial Services / UCS	In progress	2023-2024

Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
	8	Zero Waste Coffee / Beverages	Prop Mgmt / Hsopitality / CSU / Student Associations	Assessment in progress	2021-2022
WASTE MANAGEMENT BEST PRACTICES	9	Zero Waste Offices	Prop Mgmt/ Custodial Services / Facilities Planning	SGW Complete, LOY scheduled for completion	2020-2021
	10	Zero Waste Food Service and Tenants	Prop Mgmt/ Custodial Services	In progress	2020-2021
	11	Zero Waste Culture Change	Prop Mgmt/ Custodial Services / Dish Project / CUCCR	In progress	2020-2021
	12	Zero Waste Events	Prop Mgmt / Custodial Services / Distribution Svcs / Hospitality / Faculties / Student Assoc / CSU	In progress	2021-2022
	13	Zero Waste Labs	Prop Mgmt / Facilities Planning / Fine Arts / ENCS / Arts & Sci	To be assessed	2020-2021
	14	Zero Waste Renovation / Construction / Deconstruction	Facilities Planning / Project Mgmt Office / Prop Mgmt / CUCCR	To be assessed	2021-2022
PROGRESS MEASUREMENT PLAN	A	Waste Auditing, Transparency, and Digitization	Prop Mgmt/ Custodial Services	In progress	2021-2022
	B	Culture Change Tracking	Zero Waste Concordia / Campus Engagement Committee	In progress	2020-2021

Category of strategies		Strategy	Unit(s) Responsible	Status	Project start year
	C	Best Practices Tracking	Prop Mgmt	In progress	2020-2021

Appendix B. Glossary of terms

Term	Description
Circular Economy	A circular economy is an alternative to a traditional linear economy (make, use, dispose) in which we keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.
Concordia University Centre for Creative Reuse (CUCCR)	CUCCR is an initiative dedicated to diverting materials from inside Concordia's waste-stream and offering them to the general community free of cost. The initiative began in March 2017 with the launch of a materials depot, currently located in the Grey Nun's Building. It has since expanded to include interventions to capture materials generated from workshops, lockers, and residences during move-outs, and in 2019 a Tools lending library was opened in the basement of the Hall building.
Downstream interventions	In contrast with upstream interventions, these are actions taken closer to the end of the process in which a change is desired. In waste management, this might involve educating users on how to sort their waste into appropriate receptacles (rather than mitigating the production of the waste product in the first place).
Extended Producer Responsibility (EPR)	EPR is a strategy to add all of the environmental costs associated with a product throughout the product life cycle to the market price of that product. An example of EPR is the Eco Entreprises Quebec tax, which targets companies that produce recyclable packaging, requiring them to produce a self-audit of recyclable materials they produce, with the intention of collecting a proportional tax to finance municipal recycling facilities. This shifts the burden of subsidizing municipal recycling from the city and municipalities to the producers of recyclable packaging.
Plastic number 6	Better known as polystyrene or Styrofoam (when in its extruded form), No. 6 plastics are found in packing materials, disposable plates, coffee cup lids, insulated cups, meat trays, egg cartons, carry-out containers, aspirin bottles and compact disc cases. This material is not accepted for recycling in Quebec and other provinces and states due to its low market value, although it is technically recyclable. Due to its low density, the material has a relatively low environmental impact in the production and transport phases but is not always economic to recycle for the same reason.
Post-consumer waste	Once a material has been handled by the end user, it is considered post-consumer waste. In the context of food services, this would include compostable food waste generated after a meal by the user.
Pre-consumer waste	In contrast to post-consumer waste, pre-consumer waste would include materials generated during the production of an end product. In the context of food services, this would include food waste and packaging generated during the preparation of a meal, handled by staff of the establishment.
Take-back programs	A subset of EPR approaches, take-back programs are ones in which companies offer (or are legislated) to take back their products from end users with the intention of reusing materials into new products or taking responsibility for recycling of those materials.
Upcycling	Upcycling, also known as creative reuse, is the process of transforming by-products, waste materials, useless, or unwanted products into new materials or products of better quality and environmental value.
Upstream	In contrast with downstream interventions, upstream interventions are actions taken

interventions	closer to the beginning of a process in which a change is desired. In waste management, this might involve implementing policies to mitigate purchasing of materials that are non-compostable or non-recyclable (rather than focusing efforts on educating end users on sorting). Such interventions are considered a more efficient strategy, as they involve a higher degree of control and predictability of outcome.
Waste audit (aka waste characterization)	A waste audit is the process of determining the type and quantity of materials disposed in various streams (composting, recycling, landfill) within a pre-determined boundary in order to assess waste diversion performance. This usually involves collecting samples of each stream for a representative period of time, separating contents by type, and weighing each category. Results are then extrapolated to the desired period of time in which a performance assessment is required.
Waste Not Want Not (WNWN)	WNWN began as a collaboration between students, faculty, and staff with the objectives of educating Concordia community members on compost practices, increasing the availability of compost bins on campuses, and improving the environmental impact of the compost process.
Waste Diversion	Waste diversion refers the process or performance metric of sending materials to more sustainable destinations or outcomes than landfilling and incineration, such as recycling, composting, or reuse. The performance metric is expressed as a percent of weight of materials sent to beneficial destinations over total materials handled.
Waste Reduction (aka Waste Minimization)	Waste reduction refers to the process or performance metric of reducing the total quantity of materials handled within a system boundary. This is typically measured by weight and is expressed by percent of weight of materials reduced compared to a baseline year or a percent of weight of materials reduced by FTE (full-time equivalent) compared to a baseline year. The latter figure allows the metric to factor in the impact of growth or reduction in number of people generating waste within a system.
Zero Waste	Zero Waste is a philosophy that encourages the redesign of resource life cycles so that all products are reused as existing or upcycled items, as compost, or as recycled products. The end goal is for no trash to be sent to landfills, incinerators, or the ocean. Zero Waste as an objective typically allows for 90% of materials to be diverted from landfills; Concordia will use such a definition in its current plan.

Appendix C. Linkages with other stream plans

Food strategy 3: For each new approved caterers' contract request for proposals, increase the sustainability requirements. Ensure that these requirements that are aligned with the Sustainable Event Certification.

Food strategy 4: Formulate recommendations for the next Beverage request for proposal, including the complete elimination of plastic water bottles from remaining locations on campus, and include consequences for failure to meet contractual targets

Food strategy 13: Develop procedures and implement a Concordia-wide system for food leftovers donation

Food strategy 22: Track the number of course credits and student experiential learning hours resulting from the academic and research projects associated with the Food Systems Plan each year

Climate strategy 2: Develop policy integrating green certification and renewable energy into new building construction and major renovation projects. Evaluate the incorporation of green building Operations and Maintenance criteria into the renovation plans for one or more non-certified buildings on campus, while considering ways to enhance the indoor comfort and prepare environmental quality of indoor spaces

Climate strategy 4: Include a sustainability clause within the new Procurement Policy and develop procedures that encourage end-users to seek suppliers who report on and minimize the life cycle emissions of their products and services

Climate strategy 9: Develop and launch a campaign to engage and educate the campus in energy reduction

Research strategy 14: Create an equipment-sharing platform that provides users with access to shared and/or affordable research and lab equipment internal to Concordia

Research strategy 17: Encourage Concordia Sustainable Events certification program for all Concordia research events on and off campus