



Circular by Design:

Collaborative Innovation
Across Food, Environment
and CRD Sectors

COIL Circulate CoLAB Challenge Brief



Circular Opportunity
Innovation Launchpad

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Accessible formats available by contacting
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Program Description

Circulate CoLab aims to support new, innovative collaborations between businesses and/or not-for-profits across a supply chain that use circular economy approaches to reduce waste, emissions and/or packaging, and design for re-use and upcycling.

We are interested in working with teams of companies/ organizations to prototype ideas in a wide range of areas in the food, environment and construction, renovation and demolition (CRD) sectors. For instance:

- Waste-reduction ideas that will improve the current Canadian food, environment, and CRD systems
- Material-loss prevention innovations that will provide a long-term benefit
- Approaches to turn waste into new commercial products or services
- New use for the excess, lost or wasted materials along your supply chain
- A better way to connect those who have waste materials or by-products with those who can use it
- New approaches to make or deploy reusable or compostable packaging

- New design or product that reduces packaging and/or eliminates plastics from packaging and transportation
- New process or technology that improves the predictability of material and resource use in large institutions

Program Overview

- Teams of at least 2–5 businesses or organizations apply with a circular prototype proposal that has the potential to scale if successful.
- Successful teams receive:
 - \$20,000 in prototype funding
 - 16 weeks of support to implement their prototype
 - 6 hours of one-on-one mentorship
 - Direct access to the COIL circular economy ecosystem of experts and practitioners
- Teams pitch their prototypes to a panel of COIL Advisory members for the chance to receive an additional \$100,000 to fund a year-long Demonstration pilot project



Circulate
CoLab

Key Dates

June 2022	Applications Open
July 13, 2022 11:30 a.m. ET	Information Session Register (optional)
September 9, 2022 5 p.m. ET	Application Deadline
September 23, 2022	Notification of Acceptance
October 5–January 20	Circulate CoLab Program <ul style="list-style-type: none">– Self-paced project prototyping– Monthly project support calls– 6 hours of available mentorship
November 17, 2022 11:30 a.m.–12:30 p.m. ET	Coffee with COIL Networking Event
January 20, 2023 TBC	CoLab Pitch Event
February 17, 2023 5 p.m. ET	Final Reporting Deadline



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What is COIL?

Circular Opportunity Innovation Launchpad (COIL) is an innovation platform and activation network fostering, proving and scaling transformative solutions to move Canada toward a sustainable, circular economy. COIL is doing this through business incubation, acceleration and collaboration programs, innovation challenges, and large-scale demonstration projects.

COIL is a Smart Cities initiative of the City of Guelph in collaboration with the County of Wellington and community collaborators. COIL is funded in part by the Government of Canada through the Federal Development Agency for Southern Ontario. Projects across southern Ontario are eligible for funding under COIL.

COIL Circulate CoLab

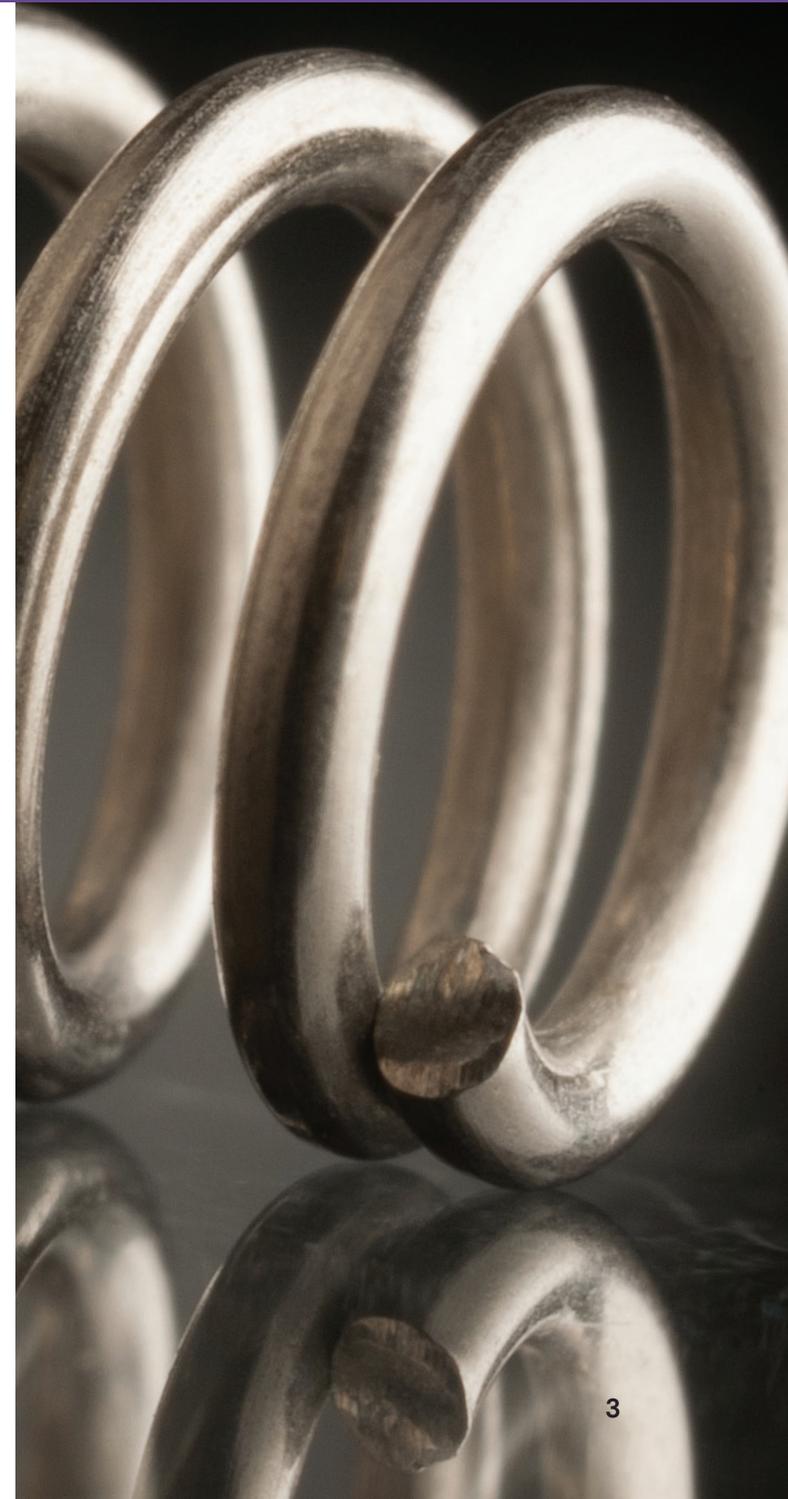
By 2024, COIL will fund five industrial-scale circular economy demonstration projects in the food and environment sectors. We're looking for projects that create new circular collaborations between organizations and that test, prove and demonstrate innovative, circular supply chain models capable of transforming an industry, or even create new ones.

To find projects capable of disrupting the status quo, COIL is holding three Circulate CoLab innovation challenges:

Round I: November 2021 – February 2022 **[Complete]**

Round II: April 2022 – August 2022 **[In Progress]**

Round III: October 2022 – January 2023 **[Applications Open]**



COIL is looking for teams of companies that want to be Canadian circular economy leaders. Beyond project funding and mentorship, participants in the CoLab challenge will be promoted across the [COIL](#) and [Our Food Future](#) networks, including at national and international forums. Lessons learned from each CoLab cohort and funded demonstration project will be documented and shared to help expand Canada's circular economy.



Since November 2021, COIL has funded and supported nine teams made up of 33 companies, non-profits, and institutions. These projects have created and commercialized new technologies, products and business models that reduce or upcycle food waste, implement sustainable packaging systems, or address food insecurity.

Using creative circularity to expand the product line

Troubled by the 75 annual tonnes of organic by-product from their juicing process, [Greenhouse Juice](#) has teamed up with [Herbert Labs](#) and [SAINA+](#) to find a solution. As a company that has prioritized organic and non-GMO ingredients and sustainable glass bottling since its inception in 2014, the challenge was not just about waste reduction, but also creating something that was as nutritious, delicious, and convenient as their customers have come to expect from their products. Enzymatic treatment prototyping has successfully produced a whole plant powder for juices, teas and other applications. As the first-place winner of COIL's [Circulate CoLab](#) in 2022 and recipient of \$100,000 in Demonstration Project funding for the next year, great learnings are expected to come out of this trio. Read about their [Circular Journey](#).

You can read about all Circulate CoLab projects on our [Stories page](#).

The Challenge & The Opportunity

Disrupting wasteful linear supply chains with circular innovations

Circulate CoLab is funding teams made up across supply chains in (a) the agri-food industry; (b) the environmental sector; (c) construction, renovation, and demolition (CRD).

Circular Food Transitions

Our current food system is predominantly designed around a linear make-take-dispose model, which relies on the constant input of virgin materials, with relatively little reuse or revalorization of materials or byproducts after their initial use. This linear system is wasteful, has negative impacts for our environment and, as the global population grows, is unsustainable.

Presently, 58%¹ of all food produced in Canada is lost or wasted while 17%² of Canadians report not always having access to enough food. The estimated value of avoidable food loss and waste in the processing and manufacturing segment alone is approximately \$21B annually.³ Globally the food system is

responsible for approximately 26%⁴ of global greenhouse-gas emissions.

While complex, the food system is also ideally structured to be redesigned around circular economy principles. When food and organic waste is diverted from landfill, innovative processes can turn those materials into energy, nutrients for agriculture, animal feed or new consumer products.

Though consumers and retail generate a significant amount of food loss and waste, a recent [food material flow study](#) in Guelph and Wellington County found that the vast majority of food loss and waste occurs upstream during production, processing and manufacturing activities⁵. In Guelph and Wellington, over 31 kilotons of food are lost during storage and packaging, and over 23 kilotons are planned processing loss (i.e. byproducts or coproducts that typically end up in landfill)⁶.

1 Nikkel, L., Maguire, M., Gooch, M., Bucknell, D., LaPlain, D., Dent, B., Whitehead, P., Felfel, A. (2019). [The Avoidable Crisis of Food Waste: Roadmap](#); Second Harvest and Value Chain Management International; Ontario, Canada.

2 Ibid

3 Ibid

4 Ibid

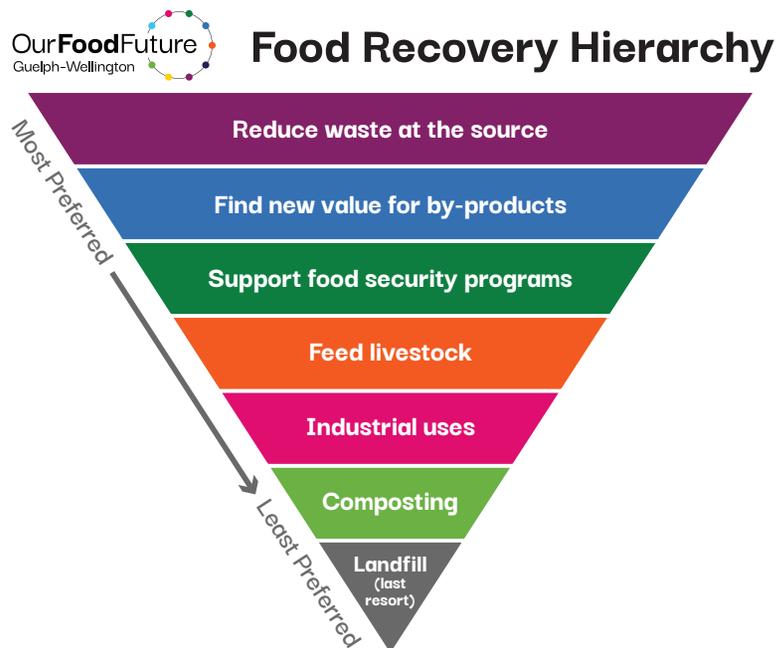
5 Dillon Consulting and Metabolic. (2021) [Food and Food Waste Flow Study](#).

6 Ibid.

Environmental Transitions

Beyond organic waste, food packaging is the source of a tremendous volume of single-use plastic waste. According to a report by Environment and Climate Change Canada and Deloitte, “9% of all plastic is recycled [in Canada] – the other 90% winds up in landfills, or the environment. If you could put a price tag on that plastic waste, it would be labelled a \$7.8 billion “lost opportunity”.”⁷

⁷ Deloitte, Cheminfo Services Inc. (2019). [Economic Study of the Canadian Plastics Industry, Markets and Waste: Summary Report to Environment and Climate Change Canada.](#)



There is a desperate need for innovation in this sector. Governments at the federal and provincial level are moving toward bans on single use plastics and increased producer responsibility for packaging. New, sustainable packaging solutions and management is needed. Despite benefits that plastic food packing has in shelf stability and transportation ease, European research has indicated that food waste has trended upwards concurrent with plastics use (and waste).⁸

Construction, Renovation and Demolition (CRD)

The construction, renovation and demolition industry is a large part of the Canadian economy and our society. Statistics Canada reports a \$20.3 billion total investment in building construction in March 2022. Governments at all levels and the private sector are making major investments in this sector over the next decade to address Canada’s unprecedented housing crisis as well as to retrofit existing infrastructure for climate change resiliency. CRD sector waste contribute approximately 25% of landfill by volume, and some building materials, like concrete, are major sources of carbon emissions⁹.

Like the food system, the CRD industry is predominantly designed around a linear make-take-dispose model, which relies on the constant input of virgin materials, with relatively little reuse or recycling. The production of foremost standard

⁸ Walker, T.R., McGuinty, E., Charlebois, S. et al. Single-use plastic packaging in the Canadian food industry: consumer behavior and perceptions. *Humanit Soc Sci Commun* 8, 80 (2021). <https://doi.org/10.1057/s41599-021-00747-4>.

⁹ The Recycling Council of Ontario (2005). [Let’s Climb Another Molehill, An Examination of Construction, Demolition and Renovation \(CRD\) Waste Diversion in Canada and Associated Greenhouse Gas Emission Impacts.](#)

CRD materials (e.g., concrete, wood, steel, gypsum wallboard) are very resource intense. While recycling models exist for most CRD materials, many of these approaches downcycle the materials into lower value products. However, the rising cost of transportation makes it hard for these solutions to compete economically with disposal in a landfill. The effects of the COVID-19 pandemic have identified the sensitivity of the global supply chain and our reliance on imported materials. For example, the cost of wood during the pandemic skyrocketed and many materials were difficult to acquire due to supply chain issues worldwide.

The [COIL Zero Waste Economic Transformation Lab](#) was established by COIL with founding support from The Co-operators to apply place-based circular economy strategies to develop and test new opportunities to reduce or redirect waste from sectors across the economy starting with construction, renovation, and demolition materials. Through the Circulate CoLab and other programs, Zero Waste Economic Transformation Lab is looking to help organizations develop and commercialize innovative solutions to reduce and generate new value from CRD waste.

Material loss and waste is **a systems issue**. Ingrained economic incentives and cultural attitudes across the supply and consumption chains have created the current, wasteful status quo. **To change this, we need system-level solutions** that disrupt linear practices and make the business case for why the future economy needs to be circular.

Application & Participation Details

Step 1: Determine eligibility

- ❑ **Open to all Canadian entrepreneurs and organizations (for-profit or not-for-profit) with a business or charity registration number.**

It doesn't matter if your current work is focused within the food system or not. Ideas can be inspired from any industry, sector or system.

- ❑ **All demonstration projects that receive funding **must be located in southern Ontario**¹⁰.**

*We strongly encourage and value submissions from businesses owned by women, visible minorities, Indigenous peoples and people with disabilities.

We encourage interested teams in attending our [Information Session on July 13, 2022](#), or to contact info@coil.eco for eligibility inquiries.

¹⁰ Note: Non-Canadian organizations are eligible to participate as members of CoLab project teams; however, per FedDev Ontario funding guidelines, all project funding must be primarily directed towards Canadian enterprises. While some project elements could be located elsewhere, project elements receiving funding must be primarily located in southern Ontario.

Step 2: Apply

All applications must be submitted through COIL's [central application portal](#). You will be asked to provide:

- a business or charity registration number for lead applicant
- contact details for all organizations making up the project team
- a high-level outline of the problem the project team is trying to solve the proposed solution
- the anticipated impacts of the solution (e.g. volume of waste diverted, carbon emissions avoided, jobs created, etc.)
- how the solution could be tested and prototyped within a sixteen-week window and anticipated impacts of the prototype
- the anticipated pathway for how a validated prototype approach could be scaled at least five times if selected as a full demonstration project
- background details and experience of the collaborators
- proposed matching contribution from project team at the prototype / demonstration project phases (cash and in-kind) any additional areas of consideration (e.g., partnerships with post-secondary institutions, anticipated intellectual property created, social impacts, etc.)

Applications must be received by 5 p.m. on Friday, September 9, 2022.

Step 3: Evaluation

Each submission will be evaluated by an experienced review panel based on a range of criteria aimed at identifying projects that can have a significant and long-term impact on systems change.

Evaluation criteria include:

- **Proposal Innovation:** novelty of the approach, use of technology, outside-the-box collaborations
- **Suitability for the CoLab Challenge Process:** project feasibility within allotted time/budget, experience, fiscal and innovation capacity of project proponents
- **Potential Economic Impact:** realistic immediate pathway to scaling to demonstration project, potential for new jobs, products or intellectual property
- **Potential Impact on the Industry:** increased productivity, sustainability of business model, scalability/replicability of approach, potential to influence systems change
- **Potential Environmental Impacts:** impact of waste and/or emissions reduction or prevention
- **Potential Social Impacts:** potential for social benefits; diversity and inclusion opportunities

Those accepted to participate in our Circular Innovation CoLab will be notified no later than September 23, 2022.

Step 4: Circulate CoLab prototype phase

Two to five teams will be selected to participate in the 16-week CoLab process where they will:

- Receive \$20,000 to develop and prototype their solution
- Have access to mentorship from Innovation Guelph, circular economy training and networking
- Receive support and connections from across COIL's Urban-Rural Test-Bed Network
- Prepare a pitch-presentation to compete for up to \$100,000 in additional funding to pilot their work through a year-long Demonstration Project.

During the CoLab process, each team will work with COIL advisors who will provide guidance and contacts to help the team increase the impact of their project and better position it for the final pitch.

Step 5: Final pitch

Following the 16-week CoLab process, teams will pitch their solution and prototype to an expert evaluation committee. At least one team will be selected to receive \$100,000 in additional project funding to expand their solution into an industrial-scale demonstration project.

Projects not selected as full demonstration projects may still have the opportunity for additional project funding under COIL on a case-by-case basis depending on the success of the prototype and specific requirements of the project. All teams will also have access to COIL Alumni programming and remain involved in our growing circular business community.

Step 6: Demonstration project (project scaling)

The selected team(s) will have one year to scale their prototype into a Demonstration Project. COIL will work with the team to embed their refined solution into their broader supply chain, showcasing how it will positively and practically affect long-term change.

All funded demonstration projects are intended to showcase the real-world business potential of the circular economy. Funding recipients will be expected to support a reasonable range of communications activities to highlight the project and promote the circular economy.

For more information

- coil.eco/colab
- info@coil.eco

Frequently asked questions

1. **I have a great idea but I haven't found other partners who want to participate. Can I still submit an application?**

To develop projects capable of reaching industrial scale, we require between two to five businesses or not-for-profit organizations. If you have an idea, but are unable to find collaborators, please contact our COIL team (info@coil.eco) to see if we can help.

2. **What if I operate a closed-loop supply chain already?**

If you have a highly closed-loop supply chain that you want to innovate, please email us to discuss your project idea. Exceptions may be possible if there is strong potential for an interesting project with potential to scale. We may also be able to connect you with potential partners.

3. **How do you define "industrial-scale" demonstration projects? Is this just aimed at large businesses or can groups of small businesses apply?**

We are looking to help create solutions or business models that can scale to transform an industry or supply chain. We have loosely defined "industrial-scale" to mean projects that are able to realistically achieve at least five

times the impact at scale they were able to demonstrate through the CoLab prototype. We hope and anticipate teams will include a mix of large, medium and small enterprises and/or not-for-profits. Teams of only small businesses can absolutely apply; however, small enterprises, like all participants, will need to demonstrate a realistic pathway to scale the impact of their CoLab prototype at least five times.

4. **What is the expected time commitment for organizations participating in the CoLab process?**

Time commitments will depend on the nature of each project and structure of the project team and collaborators. Our CoLab will kick off with a series of onboarding sessions which will establish the workplan for each team, including timelines for developing a project budget. Beyond the onboarding, COIL will coordinate regular one-hour calls with each team over the 16-week process.

5. **How can the innovation challenge and demonstration project funds be used?**

Our innovation challenge (\$20,000) and demonstration project (up to \$100,000) funds can be used only for eligible activities and costs, such as research, hiring

consultants or experts, product creation and design, development or implementation of new technologies, purchasing of new equipment, labour, and many other categories. Each team will work with a COIL advisor to review their proposed expenditures and ensure they meet our eligibility criteria at the start of the process.

6. Are there requirements for matching contributions from project team members?

Participating organizations are not required to provide matching contributions. However, COIL aims to develop solutions that can be scaled and make a significant impact, and matching contributions can help broaden that impact. Therefore, our application form and final CoLab pitches ask for details on participant company contributions (cash and/or in kind), which may factor in project selection.

7. Can multinational companies participate or is this only for Canadian-owned companies?

Multinational companies can participate in project teams; however, project funding must be primarily directed to Canadian-owned firms. Please contact our COIL team (info@coil.eco) if you have a specific scenario you'd like to discuss.

8. Do projects or all project components need to be located in southern Ontario?

Projects must be primarily located in southern Ontario. While some project elements/collaborators across a supply chain may be located outside of Ontario, all project funding must be primarily spent for components in southern Ontario. Please contact our COIL team (info@coil.eco) if you have a specific scenario you would like to discuss.

9. Who will own project intellectual property?

Participating businesses will own all IP coming out of COIL CoLab prototypes and demonstration projects. As these projects will be collaborations between multiple businesses, it will be the responsibility of those businesses to agree on which IP elements belong to each project participant.

