Challenge brief

Circular Opportunity Innovation Launchpad

National Construction and Demolition Circular Innovation Challenge

Program presenters

Vancouver Economic Commission

City of Guelph — Making a Difference

The Corporation of the County of Wellington

Halifax Partnership — Connect. Collaborate. Prosper.

Primary program funding

co-operators

Additional funding support

Skyline

In-kind support

Recyc-Québec

Mentorship provided by

Innovation Guelph

PURPOSE

Circular Opportunity Innovation Launchpad (COIL) has launched our **National Construction and Demolition Circular Innovation Challenge** to encourage the development of new ideas, innovations and approaches to specifically address materials diversion and recovery or reuse, recycling and upcycling challenges in the construction, renovation and demolition (CRD) sector. COIL is seeking collaborative teams of organizations (businesses, not-for-profits, academia, etc) with new thinking to accelerate the climate-smart circular economy (CE).

We have funding available for CRD CE projects that can create systems-level, sector-wide impact and change. The ideas, innovations and approaches should be capable of transforming an industry, or even create a new one.

COIL is looking for teams that want to be Canadian circular economy leaders. Further to funding, mentorship and CE education, accepted participants in our CRD CE challenge will receive promotion across our networks, including at national and/or international forums.

The Ellen MacArthur Foundation reports that the "built environment" uses almost half of all materials extracted from the Earth each year. This challenge is to improve the management of CRD materials from across the supply chain, recovery on construction sites, diversion away from landfill, and to increased reuse, recycling and/or upcycling.

Some thought-starters:

- Development of reverse logistics/source separation of materials from construction or demolition sites to increase diversion and recovery rates
- New process or technology to recycle or upcycle more CRD materials
- Help develop or grow secondary market demand for diverted/recovered materials
- New idea or innovation for measurable reduction of greenhouse gas (GHG) emissions
- Circular idea or approach that also reduces costs (or cost neutral) and straightforward to implement so action will be sustained over time

PROGRAM

- Teams of 3+ organizations submit a new idea, innovation or approach to accelerate circularity in the construction, renovation and demolition (CRD) sector with the potential to scale industry-wide to drive system-level change
- Teams accepted to prototype phase will receive:
    - $15,000 of funding to prototype solution
    - Six (6) hours of mentorship support
    - Ad hoc circular economy and project support
    - Access to COIL circular economy education curriculum
    - Access to COIL network of circular economy thought- and action-leaders
- Teams pitch their respective prototype to a panel of CE and CRD professionals for the chance to receive up to an additional $75,000 in funding to operate a demonstration pilot project of their prototyped idea, innovation or solution for six months

KEY DATES IN 2023

Wednesday, March 01	Applications open
Thursday, March 16 12 noon eastern Thursday, April 06 12 noon eastern	Info session 1 Register here Info session 2 Register here
Friday, April 21 8pm eastern	Application deadline
Friday, May 05	Acceptance notification
Early May	Launch meeting with accepted applicants
May to August	Prototype phase - Self-paced project prototyping - Ad hoc project support - Climate-smart circular economy support - Circular economy education curriculum - Six (6) hours available mentorship
August	Final pitch
August to March	Pilot stage for successful team

ISSUE AND OPPORTUNITY

Disrupting wasteful linear practices in construction and demolition with climate-smart circular ideas and innovation.

The construction, renovation and demolition (CRD) sector is critical to our society and the economy. The "built environment" as defined by the Ellen MacArthur Foundation includes buildings, roads, infrastructure and other human-made features in our communities. The "built environment" is contributes a significant amount of greenhouse gas (GHG) emissions. The CRD sector operates in a linear make-take-dispose economic model, relying on the constant input of virgin materials – with relatively little reuse or recycling of "waste" materials after their use. Embedding and driving circular economy principles into the "built environment" is key to reduce waste and GHG emissions.

Canada is in a housing crisis where shelter is unaffordable to many. There are various reasons for housing unaffordability, however supply issues have been identified as a large

factor. Some provincial governments are now encouraging housing targets for cities and regions to increase supply, therefore we can anticipate a large increase in construction in the coming years. More building will result in an increase in materials use and potential disposal, as well as a larger amount of GHG emissions.

Currently across the country, 3.4 million tonnes of CRD materials are sent to landfill each year, with an anticipated embodied carbon equivalency of 1.8 million tonnes (Delphi, 2021). The Canadian Council of Ministers of the Environment (CCME) reported in 2015, only 16% of wasted CRD materials were reused or recycled, while the rest went to landfill. The "built environment" currently uses 40% of global resources, and future consumption will only increase with the expected surge in construction worldwide.

There is a desperate need for climate-smart circular innovation in the CRD sector due to its large influence on the economy and its impact on the environment. Recently, some local governments have introduced deconstruction and/or "green" demolition by-laws to reduce CRD material "waste". These new measures are an example of applying circular principles within the "built environment". As part COIL's CRD CE work in the Zero Waste Economic Transformation Lab, two research reports were completed to understand both the material use and recycling conditions of the sector in our local region of Guelph-Wellington. The reports are available on our website.

APPLICATION AND PARTICIPATION

Step 1: Eligibility determination

Our national construction and demolition circular innovation challenge is **open to Canadian businesses and organizations (for-profit, not-for-profit, academia) with a business or charity registration number**. The lead applicant must be a small-to-medium enterprise with less than 500 employees.

All selected teams that receive funding **must be in Canada**.[1] We strongly encourage and value submissions from businesses owned by women, visible minorities, Indigenous peoples and people with disabilities.

We encourage those interested to attend one of our information sessions scheduled on March 16 and April 6, 2023, or to contact COIL directly.

Step 2: Application submission

All applications must be submitted through COIL's central application portal via the website.

You will be asked to provide:

- a business or charity registration number for the lead applicant
- contact details for all organizations making up the project team
- a high-level outline of the issue the project team is trying to address

[1] **Note**: Non-Canadian organizations are eligible to participate as members of project teams, however all project funding must be primarily directed toward Canadian organizations.

- the proposed solution
- the anticipated impacts of the solution (materials diverted or recycled, carbon emissions avoided, jobs created, IP created, etc.)
- how the solution could be tested and prototyped, and anticipated impacts
- the anticipated pathway for how a validated prototype could be scaled at least five times if selected as a full demonstration pilot 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 (partnerships with post-secondary institutions, anticipated intellectual property created, social impacts, etc.)

Applications must be submitted by 8 pm eastern on April 21, 2023.

Step 3: Evaluation

Each submission will be evaluated by an experienced review panel based on a range of criteria aimed at identifying ideas/innovations that can have a significant, long-term impact on the construction and demolition sector.

Evaluation criteria includes:

- **Proposal innovation**: novelty of the approach, use of technology, outside-the-box collaborations
- **Suitability for innovation 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 industry**: increased productivity, sustainability of business model, scalability/replicability of approach, national impact within the sector, 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 National Construction and Demolition Circular Innovation Challenge will be notified on or before May 5, 2023.

Step 4: Prototype phase

Three teams will be selected to participate in the prototype phase where they will:

- Receive $15,000 in funding to develop and prototype their solution
- Have access to mentorship, circular economy education and networking
- Receive support and connections from across our circularity network
- Prepare a pitch-presentation to compete for additional funding (up to $75,000) to demonstrate their idea or innovation.

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

Step 5: Final pitch

Following the prototype phase, teams will pitch their prototyped ideas or innovations to an evaluation committee of industry professionals. One team will be selected to receive additional funding to move to the demonstration pilot project part of our innovation challenge.

All teams, selected or not, will have access to further COIL alumni programming and remain involved in our growing circular economy community.

Step 6: Demonstration pilot project

One successful team will receive up to an additional $75,000 in funding and have six months to scale their prototype in a demonstration pilot project. COIL will work with the team to embed their prototype innovation into the broader supply chain and will showcase how it can positively and practically affect long-term change.

The funded demonstration pilot project is intended to showcase the real-world potential of the climate-smart circular economy. The funding recipient will be expected to support a reasonable range of communications activities including a final report to highlight the project and promote the circular economy.

FREQUENTLY ASKED QUESTIONS

I have a great idea, however I haven't found other organizations who want to partner and participate. Can I still apply?

> To develop projects capable of reaching industrial scale, we require three or more organizations on each team. If you have an idea, however are unable to find collaboration partners, then please contact COIL to see if we can help.

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

> If you have a highly closed-loop supply chain that you want to innovate, then please contact us to discuss your idea or innovation. 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.

How do you define an "industrial-scale" demonstration project? Is this aimed at large businesses or can groups of small businesses apply?

> We are looking to help create solutions or approaches that can scale to transform an industry or supply chain. We have loosely defined "industrial-scale" to mean projects that are able to increase the impact from prototype phase to the demonstration pilot project. We hope and anticipate teams will include a mix of large, medium and small enterprises, academic institutions 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 prototype at least five (5) times.

What is the expected time commitment for organizations participating in the process?

Time commitments will depend on the nature of each project and structure of the project team and collaborators. Our challenge will kick off with a series of on-boarding sessions which will establish the workplan for each team, including timelines for developing a project budget, etc.

How can the innovation challenge (prototype phase and demonstration pilot project) funds be used?

Our innovation challenge funding 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 other related categories.

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, both our application and pitch process ask for details on participating-organization contributions (cash and/or in-kind) which may factor in project selection.

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

Multinational companies can participate in project teams, however innovation challenge funding must be primarily directed (lead applicant on team) to Canadian-owned firms. Please contact COIL if you have a specific scenario you'd like to discuss.

Who will own project intellectual property?

Participating organizations will own all IP coming out of COIL prototype phase and demonstration pilot projects. As these projects will be collaborations between multiple organizations, it will be the responsibility of the team-members to agree which IP elements belong to each participant.

ABOUT CIRCULAR OPPORTUNITY INNOVATION LAUNCHPAD

Circular Opportunity Innovation Launchpad (COIL) is an innovation platform and activation network fostering, proving and scaling transformative solutions to move Canada toward a prosperous, low-carbon and circular economy. COIL is doing this through business incubation, acceleration and collaboration programs, innovation challenges, and large-scale demonstration projects. It contains a comprehensive suite of programs, tools and resources developed to achieve our goals to embed and accelerate circularity through businesses and organizations, as well as across supply chains and material streams. COIL is currently developing a national circular economy network in collaboration with Vancouver Economic Commission and Halifax Partnership.

ABOUT ZERO WASTE ECONOMIC TRANSFORMATION LAB

Zero Waste Economic Transformation Lab applies place-based climate-smart 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. As the primary corporate funder, Co-operators is supporting their commitment to embed sustainability across its business and industry. The Lab's CRD goals are to increase diversion and recovery of sector materials, and to develop and grow secondary market demand for those resources to increase reuse, recycling and upcycling. The developed best practices and learned lessons in its CRD CE work will be shared to other regions across Canada to drive the transition to a climate-smart circular economy from coast to coast.

Both COIL and the Zero Waste Economic Transformation Lab are initiatives of the City of Guelph, in collaboration with the County of Wellington and program-delivery partners. COIL is funded in part by the Government of Canada through the Federal Development Agency for Southern Ontario (FedDev Ontario), as well as by corporate supporters.

INTERESTED IN MORE INFORMATION

Madeline Carter
Program Lead, Zero Waste Economic Transformation Lab
Circular Opportunity Innovation Launchpad (COIL)
madeline.carter@guelph.ca

www.COIL.eco