



50x50x50 by 2025:

Creating Canada's first circular food economy

Imagine a food system where there's no such thing as waste and where every citizen has access to the healthy, nutritious food they need. Imagine a living lab that promotes collaboration between food entrepreneurs, farmers, researchers and social innovators—and a rural-urban partnership that leverages smart technology to make it all possible.

A global transformation has begun—and Guelph/Wellington aims to lead the way. Help us create the food community of the future.



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Executive Summary

Food is a fundamental requirement of life on this planet. However, the basic structure of today's linear "take-make-dispose" food system is unsustainable — economically, socially and environmentally.

Guelph-Wellington aims to become Canada's first circular food economy, bringing our food system and communities back into healthy balance. Through our rural-urban partnership, we will enhance access to nutritious food, reduce our carbon footprint, turn "waste" into valuable resources and create new economic opportunities.

Introducing our 50x50x50 by 2025 initiative. Our goals are to increase access to affordable, nutritious food by 50%, create 50 new circular businesses and collaborations and increase circular economic revenues by 50% by recognizing the value of "waste" — all by 2025.

Situated in the heart of Ontario's Innovation Corridor, Guelph/Wellington is a hub of food innovation and environmental sustainability, making us uniquely positioned to achieve this vision. Leveraging local expertise, big data and the latest technology, we will transform our food ecosystem into a connected "living lab" where researchers, social innovators, farmers,

entrepreneurs and other community partners collaborate to solve complex food problems.

To achieve 50x50x50 by 2025, we'll start by undertaking nine initial projects:

- mapping regional food assets and behaviours
- creating a circular action plan
- establishing a circular food economy lab
- coordinating an impact fund
- fostering new food economy skills and training
- developing and sharing circular business tools and services
- launching a "re-imagine food" awareness campaign
- increasing the circularity of carbon offsets
- mapping the value of food by-products

In the process, we'll create positive quadruple-bottom-line outcomes and a roadmap that we can share across the country and around the world, helping other communities move towards a circular food economy.

Bold vision

The City of Guelph and the County of Wellington will create Canada's first circular food economy

Using data, technology and the wealth of expertise found in this region, we will re-invent how we produce, distribute and consume food — and provide a practical roadmap for others to follow.

Today, 30 per cent of all food produced never makes it to the plate. Much of that “waste” ends up in landfill, where it creates methane, a greenhouse gas 25 times more powerful than carbon dioxide. Meanwhile, almost a billion people around the world are hungry or undernourished. Here in Wellington-Dufferin-Guelph, 14 per cent of households lack food security.

If consumption and population growth trends continue, by 2050 the global population will increase to nine billion and caloric demand will increase by 70 per cent.

We believe something better is possible. Prompted by Canada's Smart Cities Challenge, we've decided to create a food system driven by a quadruple bottom line:

- Prosperity – economic growth
- Planet – environmental sustainability
- People – greater social equity
- Purpose – a clear vision of an inclusive green economy of the future, valuing nutrition, health, diversity, equity and dignity

We're aiming to re-imagine our food system, using nature's circular approach as our inspiration. Instead of the current “linear” economic model of “take-make-dispose,” we envision a circular food economy that is economically, socially and environmentally sustainable.

We want to ensure everyone in our community has access to affordable, nutritious food required to live healthy, productive lives. We want to create new jobs and vibrant economic opportunities within a circular, collaborative ecosystem. And we want to solve food problems using strategies to repurpose and find value in the outputs our current system treats as waste — the by-products of an unsustainable linear food economy.

That's why we've set out to achieve three ambitious goals by 2025:

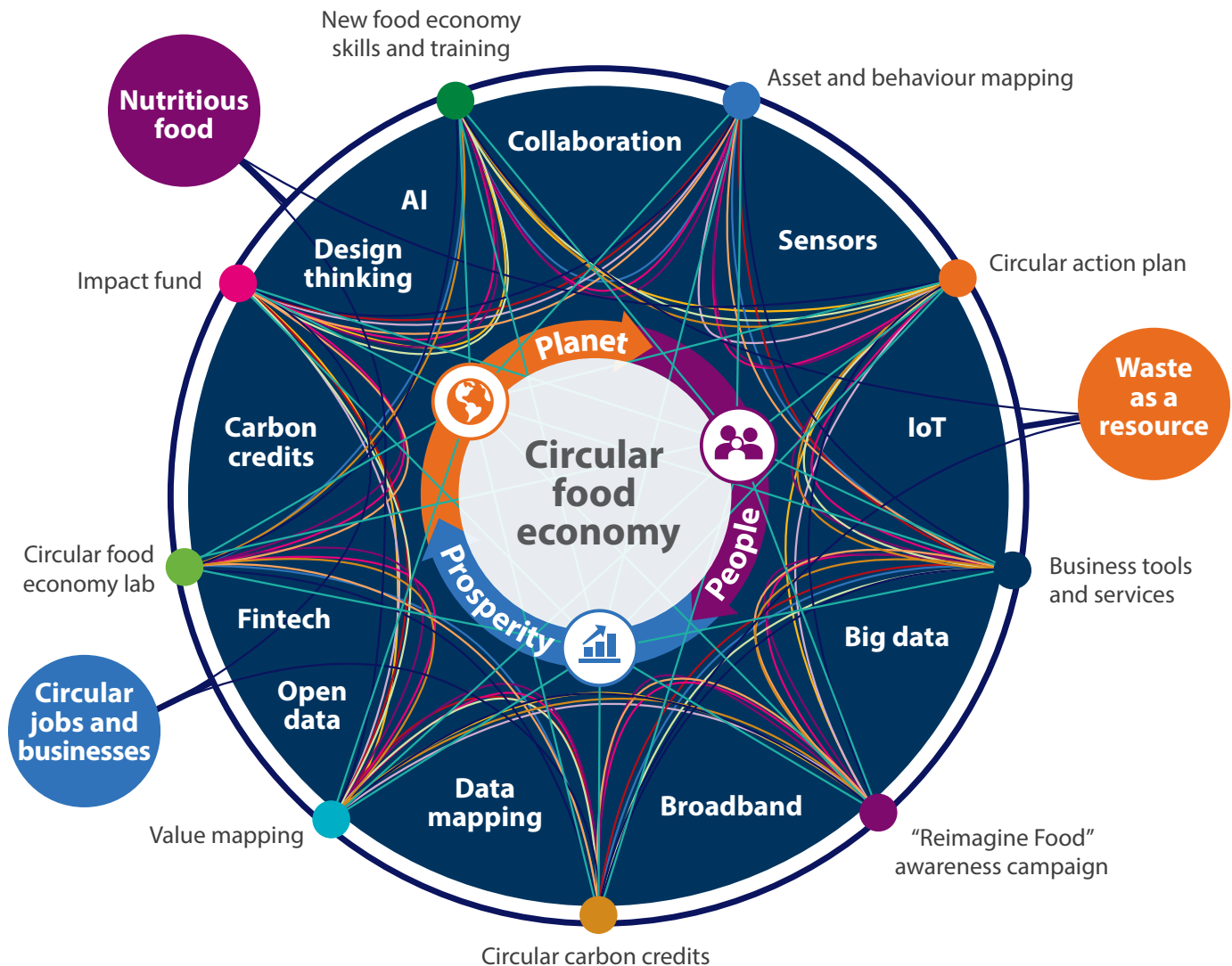
1. Increase access to affordable, nutritious food by 50%
2. Create 50 new circular businesses and collaborations
3. Increase circular economic revenues by 50% by recognizing the value of “waste”



In other words, 50x50x50 by 2025.

City of Guelph and County of Wellington—
The food community of the future

Canada's first circular food economy



We've got what it takes

To achieve our vision, we'll draw on the many experts, entrepreneurs, innovators and community champions here in Canada's agri-food hub

Guelph/Wellington is uniquely positioned to forge a new circular food ecosystem, creating positive quadruple-bottom-line outcomes to share with communities across the country and around the world.

Simply put, there's no better place to re-invent the food system than Guelph/Wellington — agri-food innovation is in our DNA. For more than a century, the City of Guelph and Wellington County have been at the forefront of designing practical, creative solutions to address food issues.

Consider just a few of our many strengths:

- A partnership that combines all the assets of a vibrant urban centre (the City of Guelph) with a hub of rural farming, production, manufacturing and distribution (Wellington County)
- Countless innovative community partners and agencies actively addressing social challenges related to food
- 1,600+ food businesses and entrepreneurs, as well as many innovators in the areas of bio-tech, clean-tech, agri-tech and food processing
- The University of Guelph, world-renowned for its work in agriculture and agri-innovation
- Conestoga College, which provides food technology and processing programs
- 40 agri-food research centres
- The Ontario Ministry of Agriculture, Food and Rural Affairs, as well as the headquarters for most provincial agriculture and food organizations
- Guelph's long track record as a leader in environmental stewardship, with food waste diversion and reduction strategies already implemented, and a Sustainability Board created to promote environmental sustainability
- Alectra's planned Green Energy & Technology Centre, which will help businesses bring green energy technology solutions to market

Guelph also boasts a strategic location in the heart of the 112-kilometre Innovation Corridor that stretches from Toronto to Kitchener-Waterloo, encompassing seven universities, 15,000 high-tech companies, a critical mass of incubators, a high-quality talent pool and access to significant capital. As a key partner in the corridor, Guelph's agri-food and clean technology assets complement the strengths other communities bring in finance and high-tech industries.

About the Circular Economy

A circular economy is restorative and regenerative by design. Key elements include:

- transitioning to renewable and reusable resources,
- redesigning waste and pollution out of the system,
- preserving and extending what's already made, and
- redefining growth with a focus on society-wide benefits that build economic, natural and social capital.

For businesses, a circular approach can generate additional value through redesigning products and business models, building new relationships with customers, harnessing technology to get more out of assets, and switching to renewable energy.

Leveraging technology

By taking advantage of smart technology and big data, we can drive significant innovation

To achieve our vision of a creating a circular food economy, we will transform Guelph/Wellington into a “living lab” — a place where social innovators, farmers and entrepreneurs work alongside data & technology experts to solve food problems.

Smart technologies are already helping farmers produce more food with fewer inputs — by optimizing seeding, fertilizer use, herd health and more. But we see the opportunities to do more, using smart technology throughout the food system.

AI, data analytics and mapping technologies can help us design evidence-based urban

policies and programs that ensure access to healthy, nutritious food. Meanwhile, connected technology can assist with measuring and tracking the flow of food and other organic material to improve business sustainability and uncover new economic opportunities for creating value from waste.

Collaboration platforms will support and connect spaces where stakeholders and citizens work together from public and private sectors to solve local and global food problems. A Community Open Data repository will enable researchers, students, entrepreneurs, agencies and government to create value from shared data.

The path to success

Three goals, nine projects

Goal 1

Increase access to affordable, nutritious, local food by 50% by 2025

We want to re-imagine a “smart” food system that better ensures food security and healthier outcomes — a system that also recognizes equity and dignity for all, better manages food resources to serve a diverse and vibrant community and celebrates the importance of good food in our everyday lives.



Project: **Asset and Behaviour Mapping**

This critical project will provide baseline data mapping of the state of access to nutritious food and community food assets. As a result, we'll be able to understand what we have and where the gaps lie — and we'll make that information freely available on an open data portal.

We'll start by launching a public health study to map nutritious food within our community: its availability, accessibility and utilization, as well as the stability of the supply. Next, we'll overlay a wealth of data from existing sources. These include:

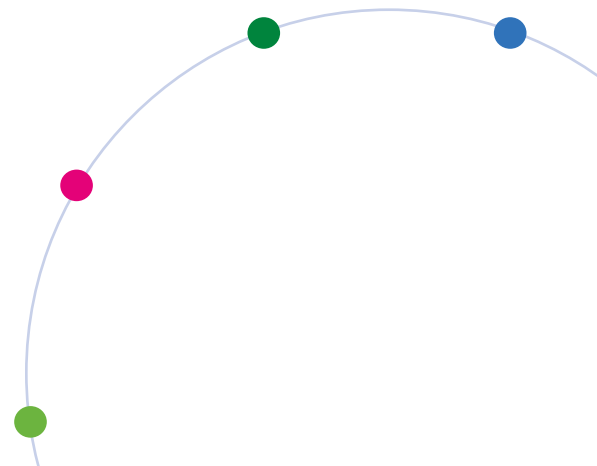
- City/County economic and planning data
- The University of Guelph Family Health Study longitudinal data
- Greater Golden Horseshoe Food and Farming Alliance Asset Mapping
- Taste Real Local Food Map data of locations where local food can be purchased
- 2018 Social Determinants of Health report
- StatsCan data
- The Canadian Council on Social Development's Community Data Program

By using big-data techniques to analyze all this information, we'll gain new insights and identify geographic and demographic priorities within the community. As a result, we can better direct resources to the areas of greatest need, develop appropriate urban agriculture plans and policies, and identify opportunities for strategic collaborations. This data will also serve as a baseline that we can use to measure our progress.



Project: **Circular Action Plan**

We'll use the insights from our mapping project to develop a Food Security & Health Action Plan in collaboration with local agencies and community groups. This plan will establish new intervention models and evidence-based policies around resource distribution and program development.



Goal 2

Create 50 new circular businesses and collaborations by 2025

Solutions happen faster through collaboration. That's why we plan to convene people with diverse expertise, talent and resources through face-to-face and online collaborations. Together, we'll use data, technology and innovative thinking to solve food system challenges and create new circular businesses, jobs and social enterprises. We'll also create new training opportunities (particularly for women, youth and marginalized populations) to prepare local residents to work in the new food economy.



Project: **Circular Food Economy Lab**

The Circular Food Economy Lab will foster partnerships and collaborations to re-invent local food systems and solve local food problems that are globally relevant. This project will be anchored by one or more "collision" spaces, creating hubs for collaborators in the agri-food, clean tech, social innovation and other sectors. It will include a "food project concierge" responsible for shepherding problem-solvers through the development process, identifying potential collaborators and connecting them with local resources. The Lab will contribute to the growing knowledge and best practices for the development of a circular economy, partnering with national and international experts such as the Natural Step Canada and the Ellen MacArthur Foundation.



Project: **Impact Fund**

This project will bring together existing funding programs and providers to better coordinate and promote a focus on the application of technology to food problems. By offering a comprehensive array of grants, loans, prizes and/or venture capital, the Impact Fund will enable new partnerships, support start-ups and facilitate innovations that apply circular ideas to food challenges. By mapping access

to incubators, accelerator services and funding programs, our partners can optimize the local system, creating a "no wrong door" model and identifying funding and service gaps in this sector. This project will also explore unique funding and support requirements for stimulating circular businesses and collaborations.

At the same time, we will utilize the successful Guelph Civic Accelerator platform, expanding it to enable citizens and stakeholders to suggest food-related challenges for our network of collaborators to tackle. The solutions proposed by collaborators would in turn attract funding to develop prototypes and accelerate implementation.



Project: New Food Economy Skills and Training

Leveraging the institutional resources, skills and talent in our community — including the University of Guelph and Conestoga College — we will provide food innovation education and training, as well as public learning labs to develop and promote fresh policies and ideas. By cultivating the skills of social innovation and entrepreneurship, we can ensure the ongoing development of innovative thinkers and doers and unlock the potential of the circular food economy.

Goal 3

Increase circular economic revenue by 50% by 2025
by recognizing the value of “waste”

Our vision is to re-imagine, re-use and revalue the inputs and outputs of our food ecosystem — maximizing their use, eliminating waste, optimizing economic value and reducing negative environmental impacts.



Project: **Business Tools and Services**

In this project, we will work closely with Guelph’s Provision Coalition, an organization that helps food and beverage manufacturers increase efficiencies and minimize food waste. By developing, curating and sharing a suite of tools and diagnostics, we’ll help public organizations re-invent their processes and business models. This project will also support the creation of value from by-products that are currently under-used or discarded, transforming them into chemicals, nutrition, medicinal compounds and energy.

Meanwhile, the Coalition’s Canadian Agri-Food Sustainability Initiative will use blockchain technology to create transparency across the food chain, enabling credible, meaningful and verifiable claims about the sustainable manner in which products are produced.



Project: “Re-imagine Food” **Awareness Campaign**

Through a public awareness campaign, we will educate Guelph/Wellington residents on the real costs of food waste, boost demand for the products of a circular economy and build stronger relationships between food producers and consumers. As a result, we will reduce waste, create local jobs and strengthen local economic and environmental resilience.



Project: **Circular Carbon Credits**

Since 2011, the City of Guelph has been selling greenhouse gas offsets produced by its Eastview Landfill Site and Organics Waste Processing Facility on the voluntary carbon credit market. To enhance the value of the carbon offsets, this project will explore adding a “social currency” to the credits, which could be used to support and stimulate an inclusive, green local economy and keep monetary and social value circulating in the Guelph/Wellington community. The City is partnering with Provision Coalition to test out the application of this approach with food and beverage industry partners.



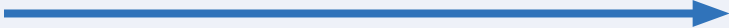































Project: **Value Mapping**

How could we make better use of food by-products? By applying design thinking, mapping value flows and analyzing information from Guelph’s RFID-equipped residential waste collection carts — 48,000,000 data points each year — we will identify key intervention points to help drive a circular food economy and create new business opportunities. This project will also map the connections between local producers and consumers, identifying opportunities to strengthen this relationship through the Awareness Campaign.

Bottom-line benefits

Supporting prosperity, planet, people and purpose


Our nine initial projects provide the building blocks required to create Canada's first circular food ecosystem. As the table below illustrates, some projects serve multiple goals and all create numerous benefits. Some will drive local prosperity, some will strengthen social equity, and some will contribute to greater environmental sustainability. However, all will support our ultimate purpose: creating an inclusive green economy of the future.

Bottom Line 			
Goals	People	Planet	Prosperity
Access Nutritious Food	     	     	  
Job Creation	   	   	   
Valuing Waste as a Resource	  	     	    


Projects

 Asset and Behaviour Mapping

 Circular Action Plan

 Circular Food Economy Lab

 Impact Fund

 New Food Economy Skills and Training

 Business Tools and Services

 "Re-imagine Food" Awareness Campaign

 Circular Carbon Credits

 Value Mapping

Transformative results

Together, we will build the "Circular Food Community of the Future"

Creating Canada's first circular food economy will bring significant benefits to Guelph/Wellington. We'll shrink our environmental footprint by reducing waste. We'll create new revenue streams and new jobs by extracting value from the by-products we currently throw away. We'll foster innovation, collaboration and skills. And we'll help ensure every local resident has access to healthy, nutritious food.

But the benefits aren't just local. By developing, testing and refining new thinking around circular food systems, we'll create a roadmap to share with the communities across the country and around the world.

Get involved!

Join the champions that are turning this vision into reality



Find out how you can contribute — visit guelph.ca/foodinnovation



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