

Guelph/Wellington's Efforts to Curb Construction, Renovation & Demolition Waste

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Vivian De Giovanni, City of Guelph
Solid Waste Resources



Contributors

Presenter



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Study Area: City of Guelph and Wellington County



97,260	County of Wellington Population
28,000	University of Guelph Population
143,740	City of Guelph Population

Smart Cities Challenge

Circular Food Economy – Proposed Outcomes

- Increase in access to affordable, nutritious food;
- New circular business and collaboration opportunities; and
- Increase in economic value by reducing or transforming food waste





Meals distributed to community members

169,799



Individuals with increased access to affordable, nutritious foods

20,572



Acres of land piloting regenerative agriculture practices

320



Circular Jobs from COIL programs

287



Stakeholders engaged in our programs

1,255



New funding leveraged

\$23,545,257

Our Impact 2020-2023



Value of inkind contributions

\$2,234,123



Value of supports for NGOs

\$3,501,866



Value of supports for businesses and social enterprises

\$4,079,255



Value saved and/or earned by shifting to more circular business practices

\$2,703,210



Value of edible food recovered

\$2,054,915



Tonnes of food waste prevented by businesses

5,077



Business collaborations strengthening the circular supply chain

310



New products and services from diverted food waste

181



Tonnes of food waste diverted, upcycled or recycled

84,860



Funded community food projects

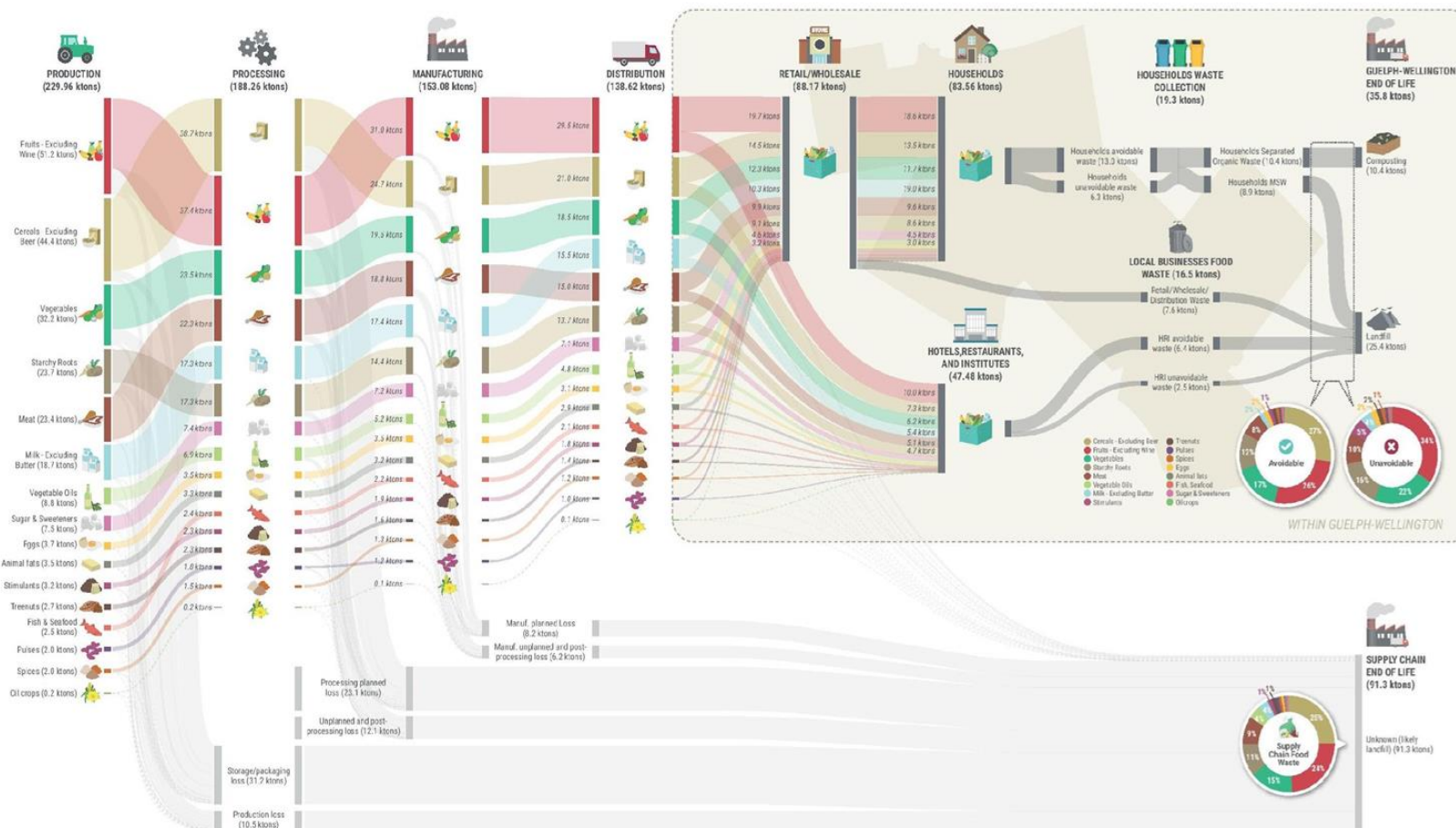
93



GHG Emissions prevented

168,788

Food Material Flow Study





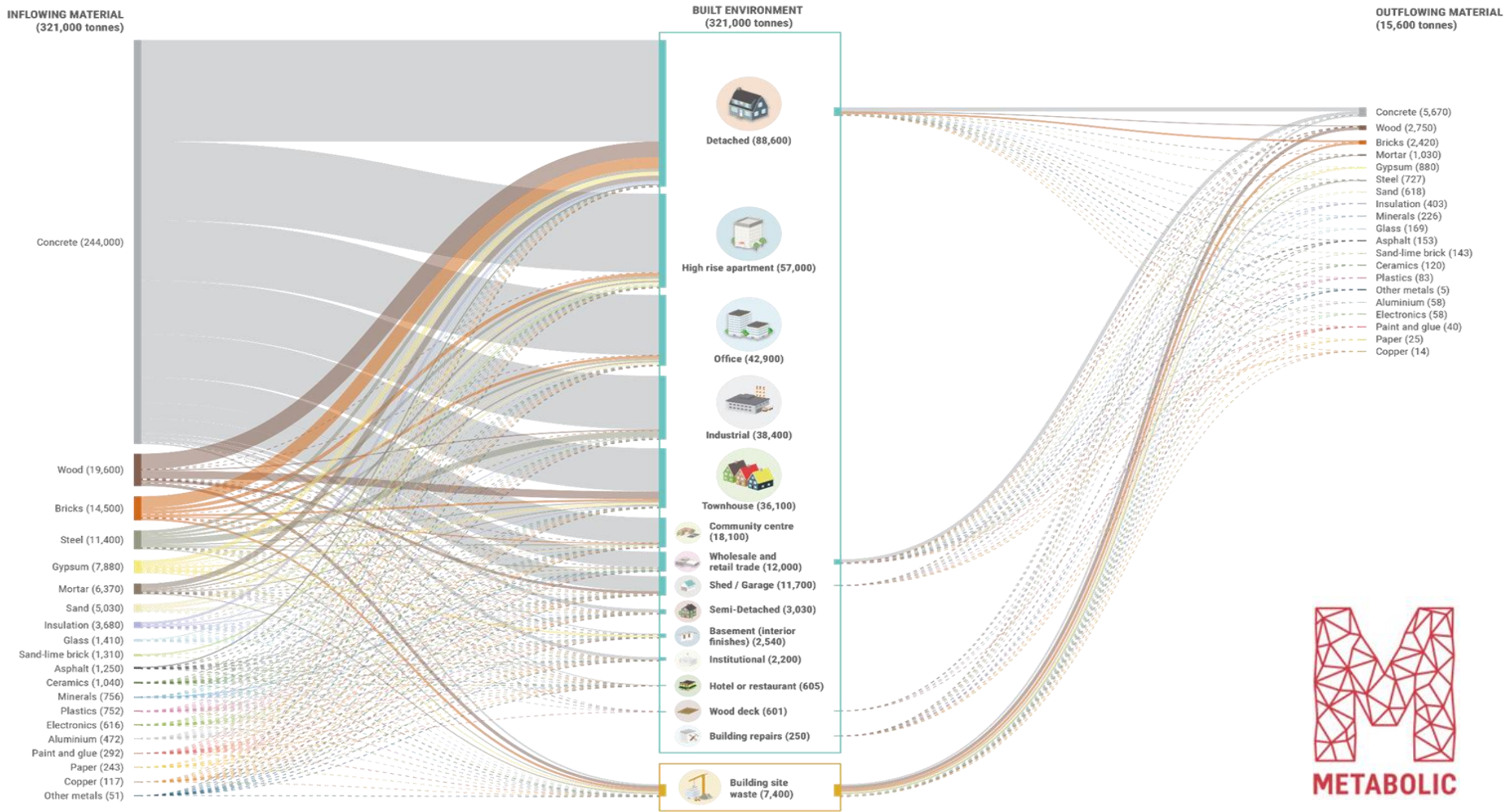
Zero Waste
Economic Transformation Lab

COIL's systems-change accelerator applying circular economy strategies to generate innovation and business development, in new sector – starting with **construction, renovation and demolition materials.**

Funding
Supporter:



Guelph-Wellington County MFA – CRD Materials



ZWETL Systems Map

CoRe Circular Economy
Innovation Laboratory

Zero Waste
Economic Transformation Lab

ReBUILDING THE ROYAL CITY

An exploration into diverting construction, demolition and renovation waste and contributing the circular built environment in Guelph-Waterloo.

The Guelph-Waterloo construction industry and regulators have been faced with an increasing volume and complexity of challenges in waste and reuse, recycling, reuse, and affordable housing and building. Effectively, resource demand is expected to double by 2050. Guelph-Waterloo and the surrounding region have the potential to become a circular economy hub. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors. The report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors. The report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.

Global resource use set to double

The building sector is responsible for 30% of global resource use and the global building construction sector is expected to grow by 17% of carbon emissions in 2050.



Construction waste and carbon pollution in Canada

Canada's CIO waste and carbon emissions are high. In 2019, the building sector accounted for 12% of Canada's total CO2 emissions, primarily from burning fuels for heating (46% with natural gas). When the portion of construction materials and waste is included, the building sector's higher carbon emissions are even higher.



Ontario's shrinking landfill capacity

Ontario's rate of waste generation is among the highest in the world, and the province's landfill capacity is rapidly declining. The province's landfill capacity is expected to be exhausted by 2025. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.



Expanding the local circular building ecosystem

The circular built environment has many benefits including design, operational, environmental, economic, and social. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.



Pyramid of RePossibility



Metaphors



2 REGULATING THE STATUS QUO?

Shaped by the provincial government's planning, building, and waste frameworks, in conjunction with neighboring municipalities, and facing pressures for neighboring delays and projects, local governments northwards have a number of tools the regulatory interactions with the building and waste industries to shape circular economy policies and outcomes.



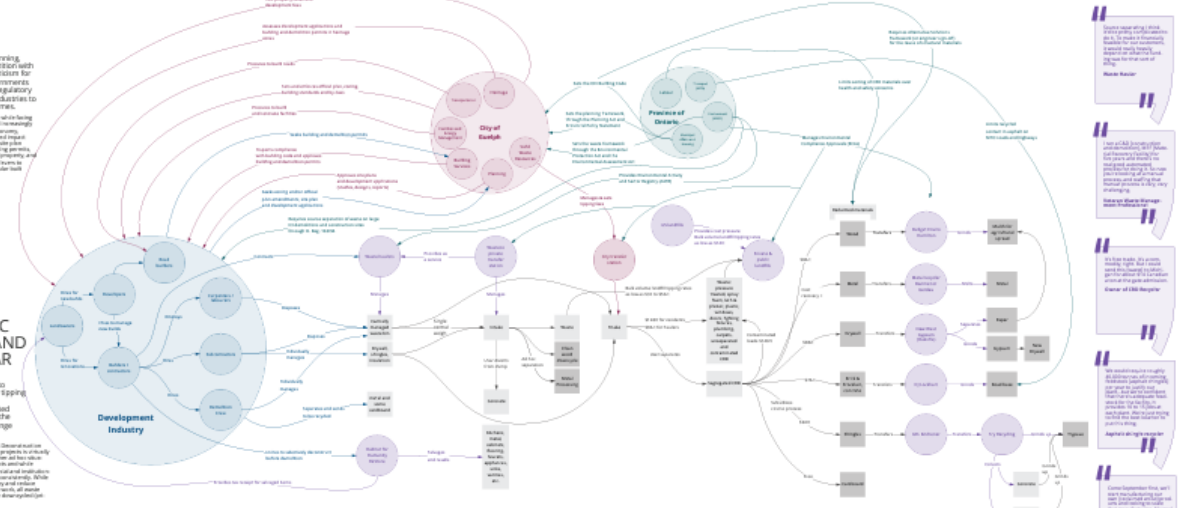
3 ADDING ECONOMIC VALUE TO WASTE AND BUILDING CIRCULAR

The building industry operates under tight margins and margins while avoiding risk to maximize profit. Unlike existing low density sprawling sites, construction and demolition waste is diverted consistently. Some innovators work under the constraints while others look for policy change before committing more resources.



4 SHIFTING TO CIRCULAR BEHAVIOUR

Landfills filling up and resources depleting. The last industrial, built, and dump debris presents problems, as they are difficult to manage and often end up in landfills. The construction industry needs to shift away from a linear model to a circular one.



Standard Auditor: "The ZWETL project is a significant step towards a circular economy in the Guelph-Waterloo region. It provides a clear roadmap for the industry and regulators to follow."
City of Guelph: "We are committed to supporting the circular economy in the Guelph-Waterloo region. This project provides valuable insights into the challenges and opportunities."
High Performance Builder: "The circular economy offers many benefits, including design, operational, environmental, economic, and social. This project explores the potential for a circular economy in the Guelph-Waterloo region."
High Performance Manufacturer: "The circular economy offers many benefits, including design, operational, environmental, economic, and social. This project explores the potential for a circular economy in the Guelph-Waterloo region."
Waste Transfer Station: "The circular economy offers many benefits, including design, operational, environmental, economic, and social. This project explores the potential for a circular economy in the Guelph-Waterloo region."
Waste Management: "The circular economy offers many benefits, including design, operational, environmental, economic, and social. This project explores the potential for a circular economy in the Guelph-Waterloo region."

1 WHY DON'T WE BUILD CIRCULAR?

Deep rooted societal myths, backed by structural market forces and entrenched policy pathways, shape our perception of economic value. This status quo is being confronted by crises that challenge the world.



Causes

Climate change	Resource scarcity	Environmental degradation	Social inequality	Political instability
Population growth	Urbanization	Industrialization	Globalization	Technological advancement
Consumerism	Overconsumption	Waste generation	Landfills	Resource depletion
Structural market forces	Entrenched policy pathways	Societal myths	Perception of economic value	Crises challenging the world

Paradigms

Linear economy	Take-make-waste	Resource depletion	Environmental degradation	Social inequality	Political instability
Circular economy	Reduce-reuse-recycle	Resource efficiency	Environmental protection	Social equality	Political stability
Regenerative economy	Regenerate-reuse-renew	Resource abundance	Environmental restoration	Social justice	Political participation

Metaphors



Events and trends

Current issues driving system and policy change.

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Develop standards

Understand the various circular economy models, their strengths and weaknesses, and how they can be applied to the Guelph-Waterloo region. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.



Create market demand

Offer free government through channels by sector or building type. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.



Advocate and collaborate

Collaborate with the provincial government to support the reach of the ZWETL project. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.



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OPPORTUNITIES

There are many challenges in creating a circular economy in the Guelph-Waterloo region. However, there are also many opportunities. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.

Provide financial incentives

Explore the potential for providing financial incentives to support the circular economy in the Guelph-Waterloo region. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.

Update policy

Explore the potential for updating policy to support the circular economy in the Guelph-Waterloo region. This report explores the potential for a circular economy in the Guelph-Waterloo region, focusing on the construction, demolition and renovation sectors.

Shift operations

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CRD Interventions & Collaborations

- Collaboration with CSA Group on circular economy standards for the built environment
- Source Separation Pilot
- National C&D Circular Innovation Challenge
- Deconstruction Pilot
- Construction Material Recycling Day with Habitat Restore
- CRD Waste Management Guidebook



Source Separation Pilot

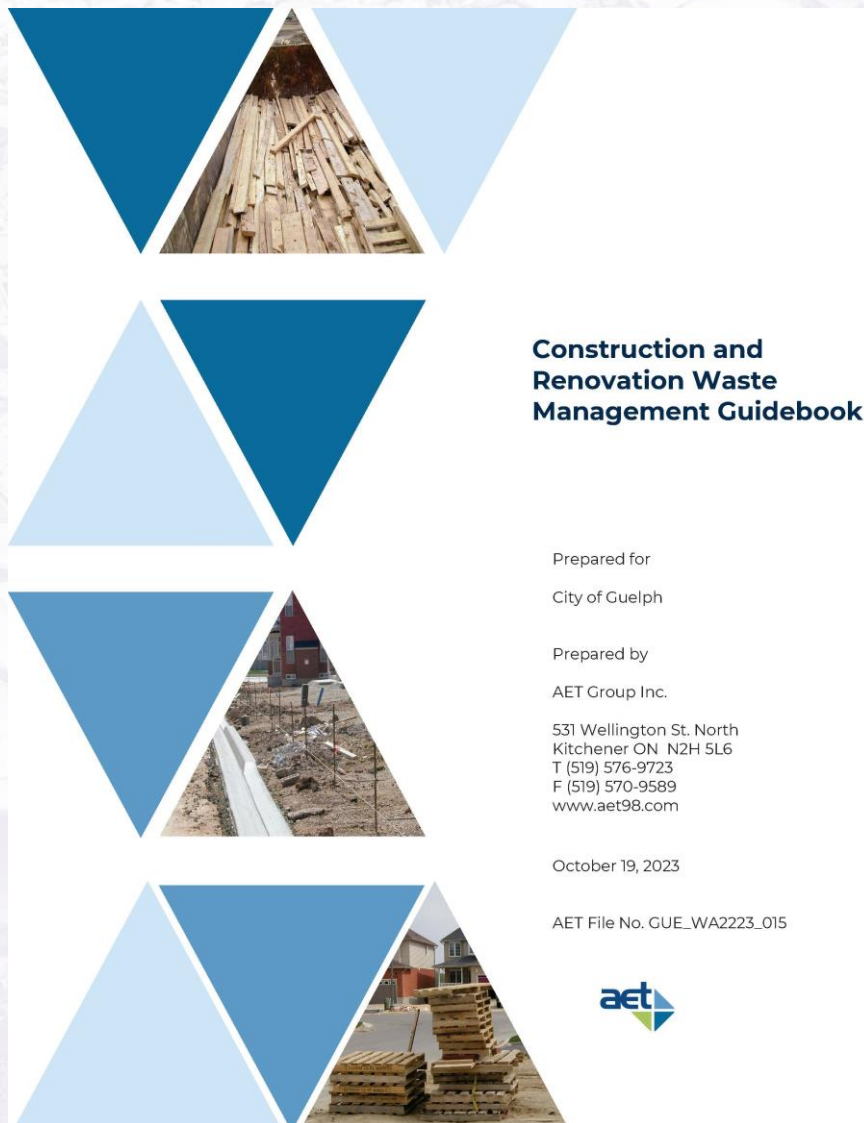


Source Separation Pilot

- Two companies we worked with - AET and The Better Bin Company
- Stat from Ontario Developer – for every 5 houses built, enough wood waste from framing to build a 6th house.
- Pilot expansion with discount provided to participating contractors



CRD Waste Management Guidebook



- Includes information about specific waste streams and best ways to reuse, reduce and eventually recycle these materials

CRD WASTE MANAGEMENT GUIDEBOOK SUMMARY

FOR CONTRACTORS:

Key Takeaways:

- The Guidebook focuses on key construction, renovation and demolition (CRD) waste types and aims to provide clear, concise instruction for construction waste material management and disposal.
- Before swinging that sledgehammer, ask yourself whether the structure could be renovated, retrofitted and if not, then deconstructed rather than demolished. Habitat for Humanity ReStore offers deconstruction services to salvage items for resale/reuse.
- Shop for used materials at your local Habitat for Humanity ReStore and/or online reuse and exchange platforms.
- Please note, CRD waste is not permitted in any City of Guelph curbside collection carts. CRD waste must be taken to the Waste Resource Innovation Centre (WRIC) for recycling or disposal.
- Refer to the full Guidebook for more detailed information about construction waste management.

Best Practices for Managing Waste On Site:

1. Create a waste reduction workplan during initial phases of the project to minimize waste generated.
2. Utilize multiple bins/dumpsters to allow for source separation of waste materials - use signage and strategically place them on the site.
3. Set-up a "reuse" area for materials that can be reused on site - lumber, forming materials, shingles, masonry bricks, offcuts, etc.
4. Materials should arrive on site as needed, not stockpiled at the beginning of a project.
5. Buy direct from a supplier to reduce packaging waste and use suppliers that offer credits for unused products.

MATERIAL SPECIFIC GUIDANCE

Material	Reduce	Reuse	Recycle
Asphalt Roof Shingles	Estimate material carefully and be efficient in cutting.	Use cut-offs for end pieces, corners or hip/ridge caps.	City recycling program for shingles available at WRIC.
Cardboard & Boxboard	Purchase materials in bulk and give preference to suppliers with minimal packaging.	Use boxes for storage or cardboard as floor covering.	Separate this waste stream for recycling.
Concrete & Masonry	Avoid over-ordering and store materials properly to prevent damage.	Unused block/masonry can be donated to Habitat ReStore.	City recycling program for rubble available at WRIC.
Drywall	Minimize offcuts by ordering material optimal dimensions.	Reuse offcuts, rather than cutting a new piece.	City recycling program for drywall available at WRIC.
Lumber	Detailed framing layouts can help reduce waste when ordering.	Make all cuts at a central location to reuse offcuts.	Clean wood can be recycled at the City WRIC.
Metal	Efficient ordering and cutting for metal materials.	Store cuttings in a central location for reuse.	Scrap metal has value when recycled.

CRD WASTE MANAGEMENT GUIDEBOOK SUMMARY

FOR RESIDENTS:

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- Talk to your contractor about waste management and refer to the entire Guidebook for more information.

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WASTE ISN'T WASTE,

UNTIL WE WASTE IT.

-WILL.I.AM



Circular Opportunity Innovation Launchpad

vivian.degiovanni@guelph.ca

more info COIL.eco/zwetl

circularinnovation.ca