

**ZERO WASTE COMMITTEE AND PUBLIC TECHNICAL ADVISORY COMMITTEE  
Public Presentations**

Thursday, November 7, 2024  
2:00 pm  
Location: Hybrid (Zoom and Metro Vancouver Office)

**AGENDA**

<b>Item</b>	<b>Speaker</b>
Welcome and Introductions	Sarah Kirby-Yung, Zero Waste Committee and Public/Technical Advisory Committee Chair
Solid Waste Management Plan Overview	Sarah Kirby-Yung, Zero Waste Committee and Public/Technical Advisory Committee Chair
Presentation #1: online	InSinkErator Canada, and Whirlpool
Presentation #2: in person	VEMA Deconstruction
Presentation #3: online	Canadian Wood Waste Recycling Business Group
Presentation #4: in person	KIAM Consultancy Inc.
Presentation #5: in person	ShareWares
Presentation #6: in person	Green-Stone Materials and Lock-Block Ltd.
10 minute recess	
Presentation #7: online	EcoSafe Zero Waste Inc.
Presentation #8: in person	Independent Contributor
Presentation #9: online	Envision Holdings
Presentation #10: online	Recycle BC
Presentation #11: online	Goatote
Presentation #12: online	Eco Green Granule Enterprises Inc. - <i>was unable to present</i>
Presentation #13: online	Urban Repurpose
Closing Remarks	Sarah Kirby-Yung, Zero Waste Committee and Public/Technical Advisory Committee Chair



## Overlooked and Misunderstood:

### UNDERSTANDING THE GARBERATOR® AS AN ORGANICS DIVERSION TOOL

Presented by:  
David Coffey – General Manager & Managing  
Director Americas

Thursday, November 7<sup>th</sup>, 2024

# Redefine the Challenge of Food Waste

An appliance originally designed for convenience is now at the convergence of three environmental mega-trends



Food is made up of an average of 70% water; fruits and vegetables exceed 90% water



# How does a Disposer Work?



- With **cold water** running, food is inserted into the disposer's grind chamber through the sink flange
- The grind ring breaks down the food waste into very fine particles, **virtually liquefying them**
- Water flushes particles through the grind ring and out of the disposer – **quick, quiet, safe**
- Slurry flows through household plumbing to municipal sewers, then to water resource recovery facility (or septic system)

# FOOD WASTE DISPOSER FACTS

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They have  
**NO BLADES!**

Centrifugal force pushes food waste against a stationary outer ring to pulverize it into a slurry



They use  
minimal electricity

Less than \$1 per year is needed for daily use of a food waste disposer



They use  
very little water

Independent studies confirm that disposers use less than 1% of daily household water



They are  
Drain Safe

Disposers pulverize food into tiny particles (under 1/8") that are easily conveyed through plumbing and sewer lines, meeting plumbing codes and performance standards





# IN VANCOUVER

InSinkErator® disposers are part of the food waste tool kit for the city and region

## City of Vancouver:

- InSinkErator worked with elected officials and staff to share the environmental benefits of disposers
- Outreach to builders and development associations

**Result:** City policy remains open to disposers as an option for residents

## Metro Vancouver:

- Multi-year engagement with elected regional officials and agency staff
- InSinkErator contributed research to technical reports

**Result:** Regional policy remains open to disposers, especially as treatment plants are upgraded to capture wastewater resources, and compost facilities struggle with odour issues

## Marketplace acceptance:

- Disposers are installed in many homes and multi-family buildings
- Market research confirms consumer interest in disposers, including as a complement to green bins in multi-residential buildings



Feed a disposer, starve a landfill™



Disposer

+



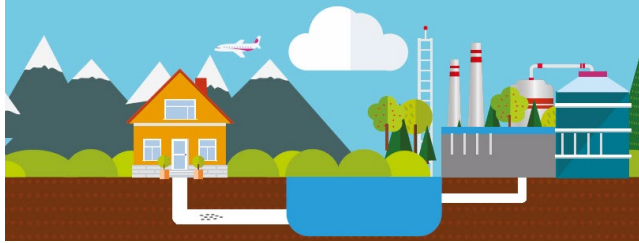
Green Bin

=



Food waste diverted from landfill

# Understanding the “system”



What happens to food scraps flushed through a disposer is well studied:

- Extensive technical and best practice research from around the world – including Canada
- Leverage existing infrastructure (household + municipal)
- Manage resources, not waste



“THE CHALLENGE IN THE FUTURE IS HOW TO EXTRACT ENERGY FROM WASTEWATER MOST EFFICIENTLY...FOOD WASTE COULD BE GROUND UP IN KITCHEN FOOD WASTE GRINDERS AND TRANSPORTED TO WASTEWATER TREATMENT FACILITIES...”.

*GEORGE TCHOBANOGLIOUS*  
father of modern wastewater treatment

# What Happens at the WRRF?



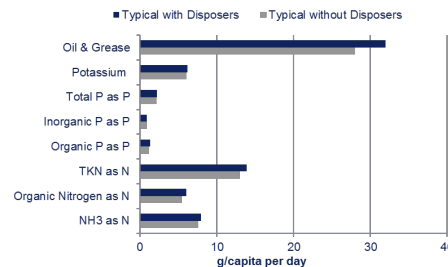
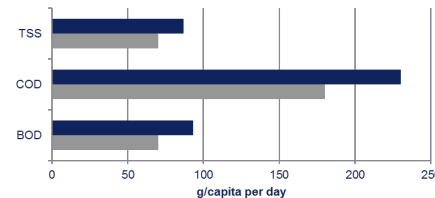
## Water Resource Recovery Facilities

- Designed to produce clean water, renewable energy and fertilizer products from the organic resources in wastewater
- Anaerobic digestion produces and captures methane from food waste and wastewater solids, and converts biogas to energy

Biological and mechanical processes turn organics, including food scraps, into resources

- Clean Water
- Biogas
- Fertilizer Products/Soil Amendments

## Loading Based on Textbooks<sup>1</sup> & Design Standards<sup>2</sup>



<sup>1</sup>Adapted from "Wastewater Engineering, Treatment and Resource Recovery," 2014. Metcalf & Eddy/AECOM. McGraw-Hill Education. 5<sup>th</sup> Edition  
<sup>2</sup>Recommended Standards for Wastewater Facilities Policies for the Design, Review, and Approval of Plans and Specifications for Wastewater Collection and Treatment Facilities." 2004 Edition



## Demonstration Project in Calgary



- A 65-unit condominium participated in a year-long project to promote and test user behavior, and measure the positive impact of food waste disposers
- Waste from the building was measured before and after installation of garburators in 50 units

### Results:

60%



reduction in  
food waste

75%



of residents noticed  
less trash odour

70lbs



Building food scrap  
reduction per week

## Highlights: 5 City Study in the USA

- 432 Houses/Apartments
- Philadelphia, Boston, Chicago, Milwaukee, Tacoma
- 30% reduction in FW
- 80% would recommend
- Less trash, cleaner kitchen, recycle more

**Philadelphia adopted  
building code requirement**

# A solution for Multi -Res



As buildings get taller, recycling and composting rates struggle...



## The Challenge in multi-family developments

- ✓ As buildings go higher, capturing organics gets lower
- ✓ Hygiene and safety concerns with communal bins/chutes
- ✓ Collection and storage challenges
- ✓ Truck-based collection and transport

## Banning Food Waste from Landfill

- ✓ Emerging policies banning organics from landfill across the country
- ✓ Builders must meet local organics management goals
- ✓ Multi-residential buildings need an effective solution

## Disposers can help!

- ✓ Convenience, convenience, convenience!
- ✓ Eliminate non-organic contamination at source
- ✓ Efficient and hygienic for residents/tenants
- ✓ Existing pipes
- ✓ Healthier property environment

# Key Takeaways

- **Garberators are well -studied** , tested, legitimate and effective **addition to the municipal toolkit to manage food waste**
- **Municipalities have substantial experience** with Garberators
- **Convergence of key trends** sets stage for broader acceptance and effective use
- **Let's Talk** – Convene joint liquid and solid waste discussion to review current research and best practices





METRO VANCOUVER  
solid waste  
management plan

Missed Opportunities or  
Potential Growth





# VEMA Deconstruction

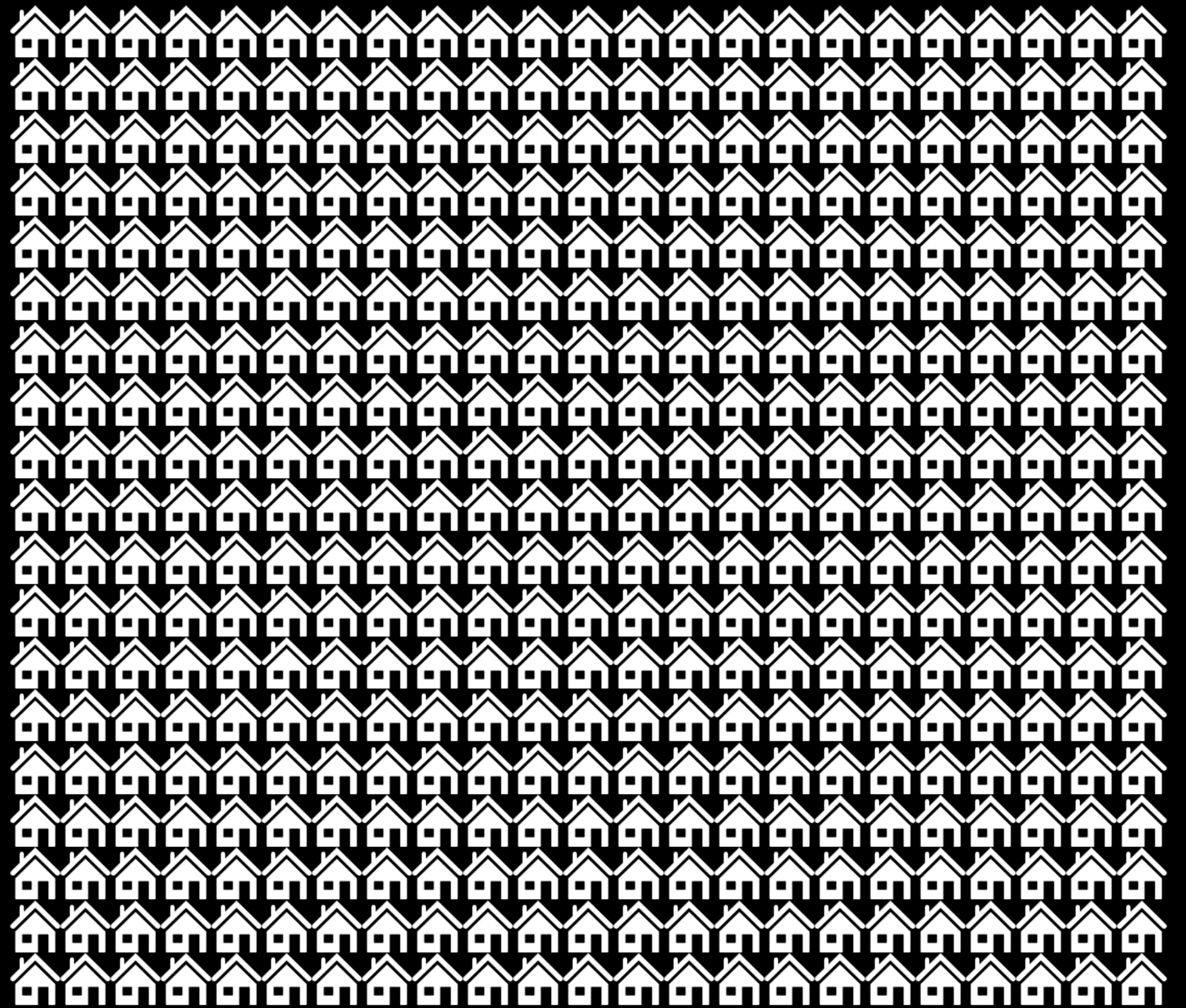
VEMA Deconstruction provides a sustainable solution for the removal of buildings by using deconstruction as the principal salvaging technique to recover usable materials for reuse and upcycling. This not only reduces waste in landfills but also provides a source of affordable materials for the community. We also create job opportunities and donate material, appliances, cabinets, furniture, and much more to charities that would otherwise end up in landfills. Our services benefit the community by preserving resources, promoting environmental responsibility, supporting local economies, and supporting the Circular Economy.

# Total and Complete DEMOLITION and LANDFILLING

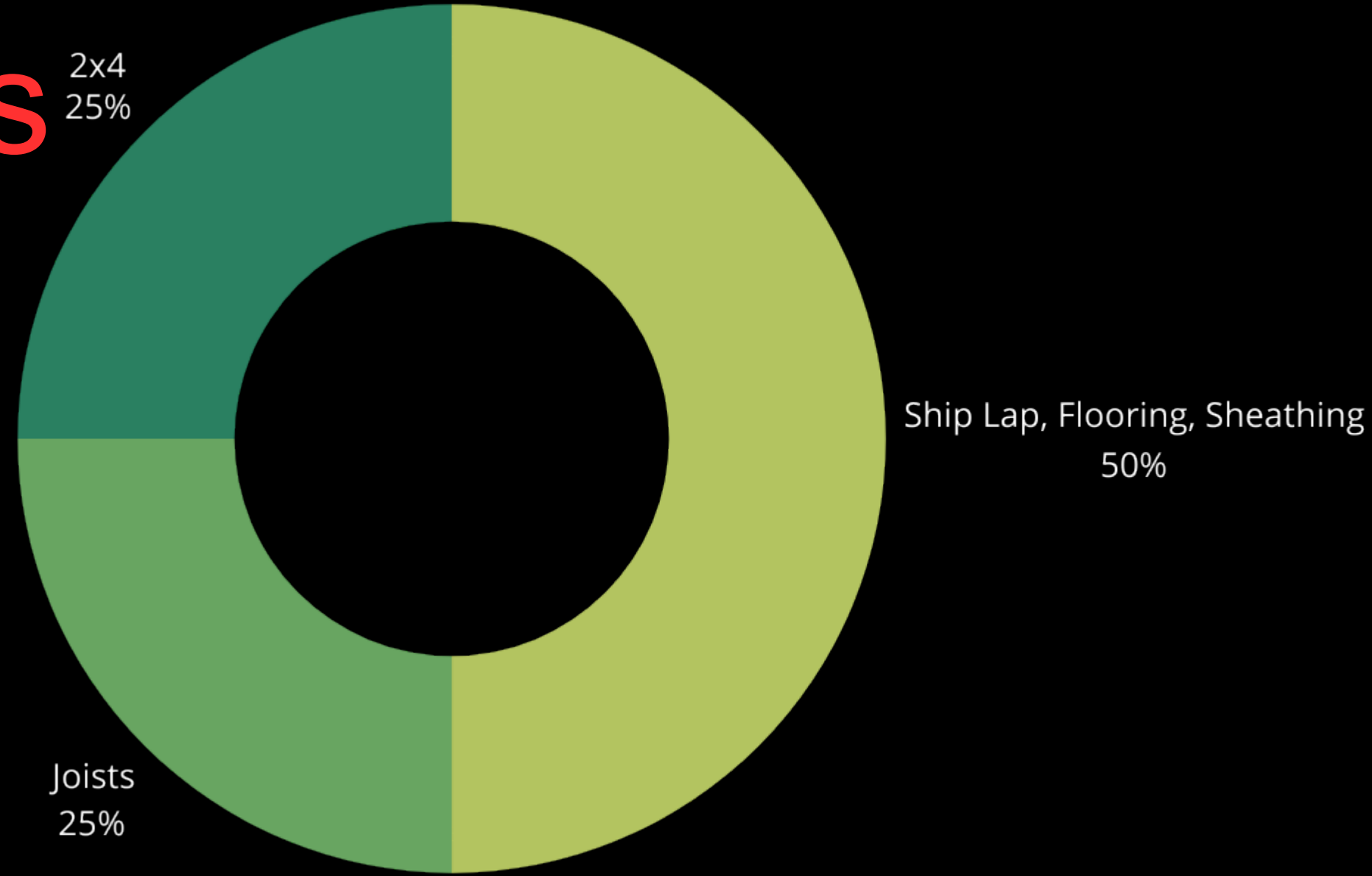
WE ARE EXPECTING THE  
DEMOLITION OF 10,000+  
HOMES IN THE LOWER  
MAINLAND IN THE NEXT 5  
YEARS.

That includes;

1. Heritage Homes
2. Character Homes
3. Single Family homes built in  
1905 all the way up to 2005



250,000,000 pounds  
of lumber  
= 125,000 Tonnes

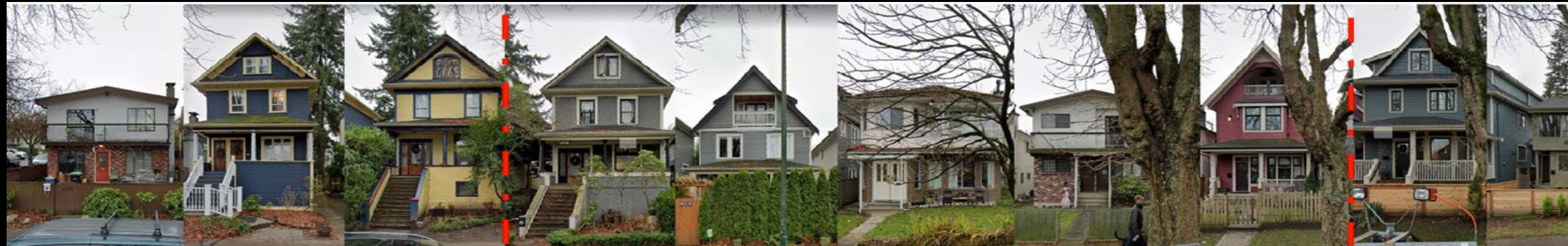


# Heritage and Character HOMES GONE



## Delightful East Vancouver street faces Broadway Plan onslaught

*Douglas Todd: A three-block stretch of character homes is bracing for at least four giant towers that would forever alter its gentle, eccentric ambience.*





# Missed Opportunities to Recover Dimensional Lumber, flooring, Shiplap, sheathing, beams





# Missed Potential in Secondary Markets

**Windows**

**Cabinets**

**Sinks**

**Tubs**

**Toilets**

**Bricks**

**Stucco**

**Siding**

**Asphalt Shingles**

**Carpet**

**Furnace**

**Doors**

**Boilers**

**Water Tanks**

**Fireplace Mantels**

**Stairs**

**Insulation**

**Drywall**

**Furniture**

**Appliances**

**Tile**

**Bathroom/kitchen fittings**

VEMA

How Do We Go  
from Lost  
Opportunities to



Growth - Admired  
by the rest of  
Canada

# LOWER MAINLAND

## DIMENSIONAL LUMBER CLASSIFICATION FROM DECONSTRUCTED HOMES

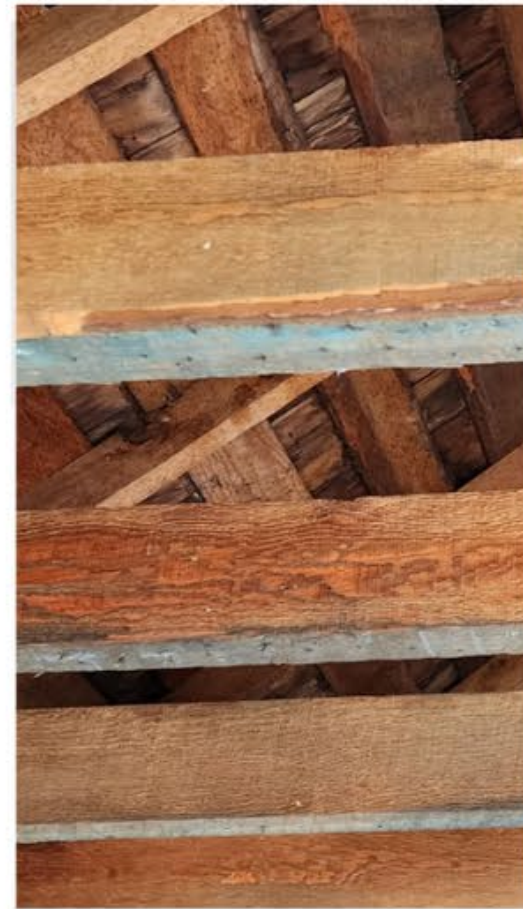
First Growth

Era

Antique Vintage Modern



Rough Sawn on 4 sides  
Old Growth Douglas Fir  
pre 1920's  
Large Dimension - 2"x4"



Rough Sawn on 2 sides  
Old Growth Douglas Fir  
1920 to 1945  
Medium Dimension - 1.75"x3.75"

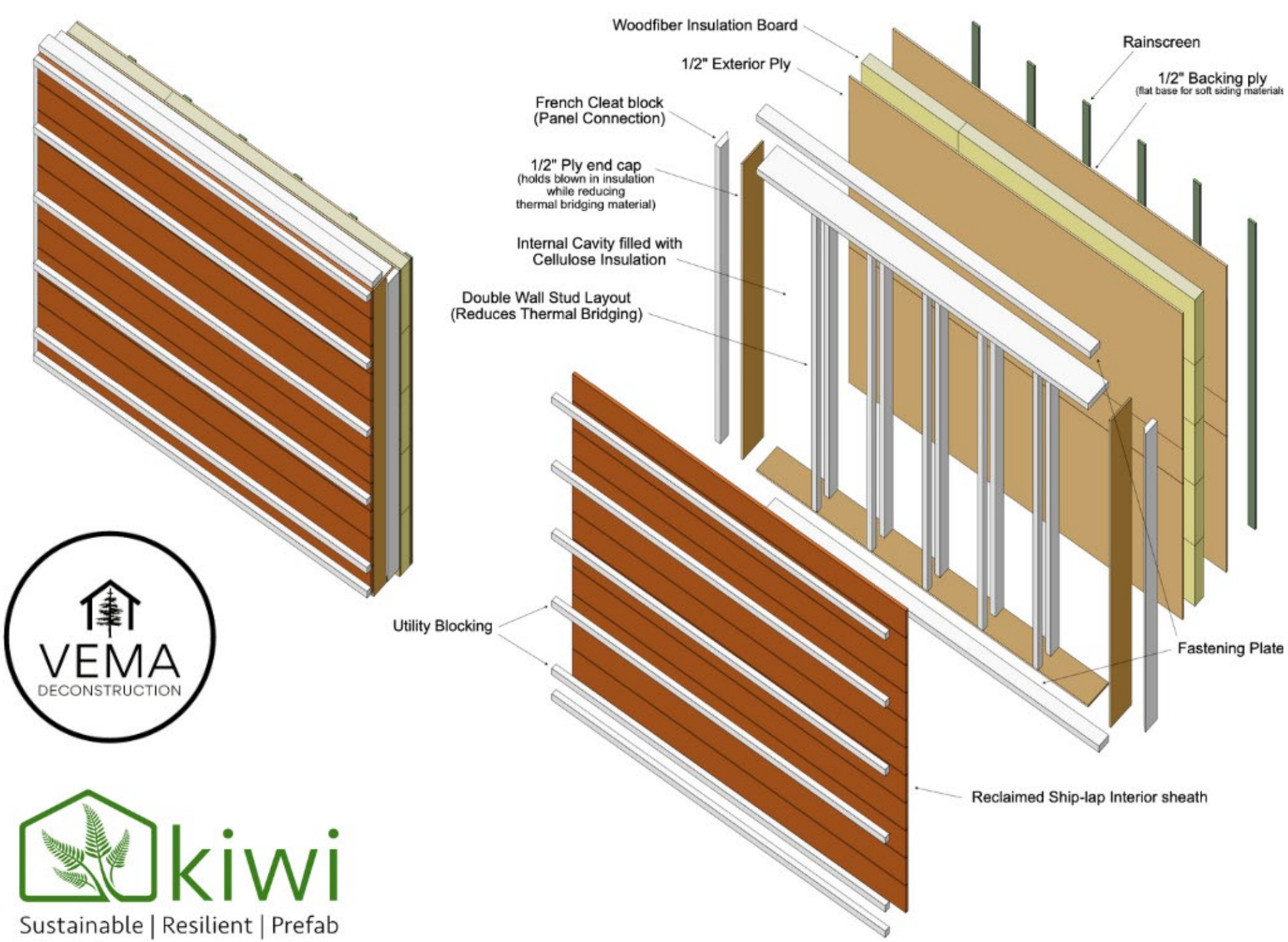


Smooth on 4 sides  
Old Growth Douglas Fir  
1946 to 1990  
Modern Dimension - 1.5"x3.5"

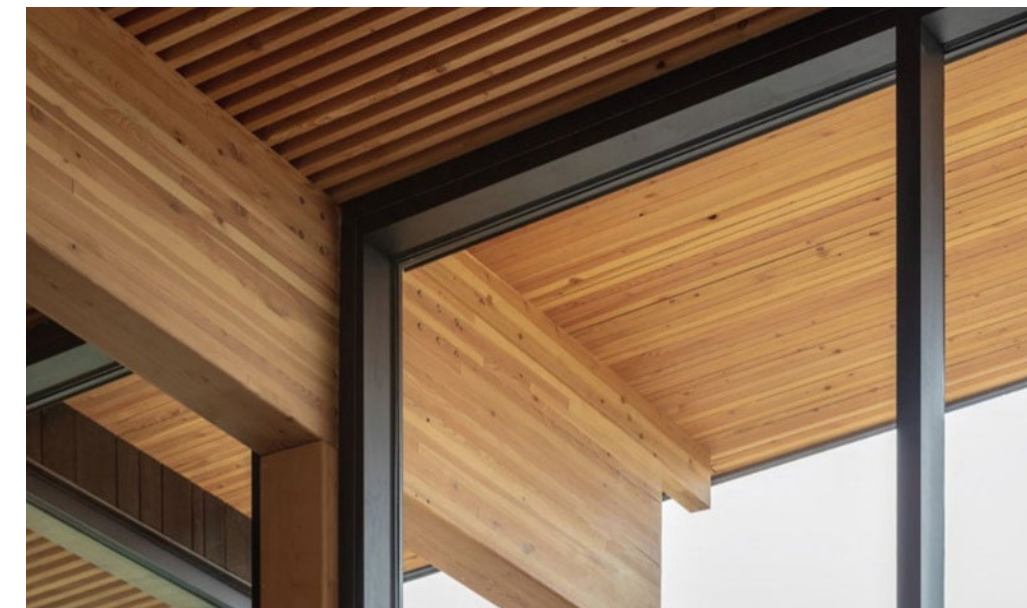
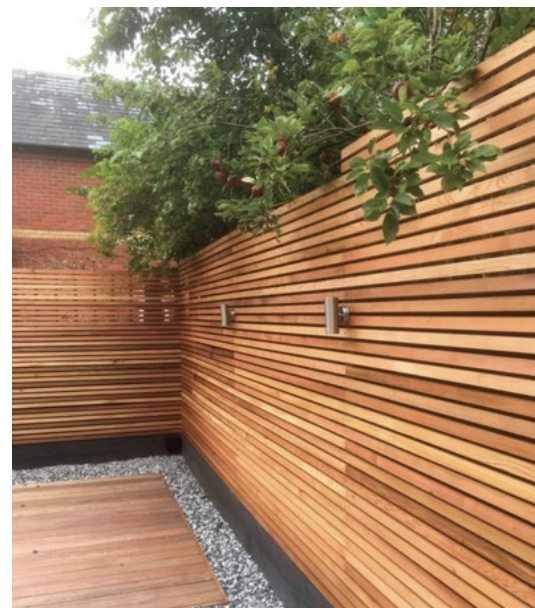


Smooth on 4 sides  
SPF Wood  
1991 to Present  
Modern Dimension - 1.5"x3.5"





Prefabricated Wall Panel Construction





**BMEX**  
*Building Material Exchange*

LEARN'S  
YOU  
BOX

**One company's waste is another company's resource**

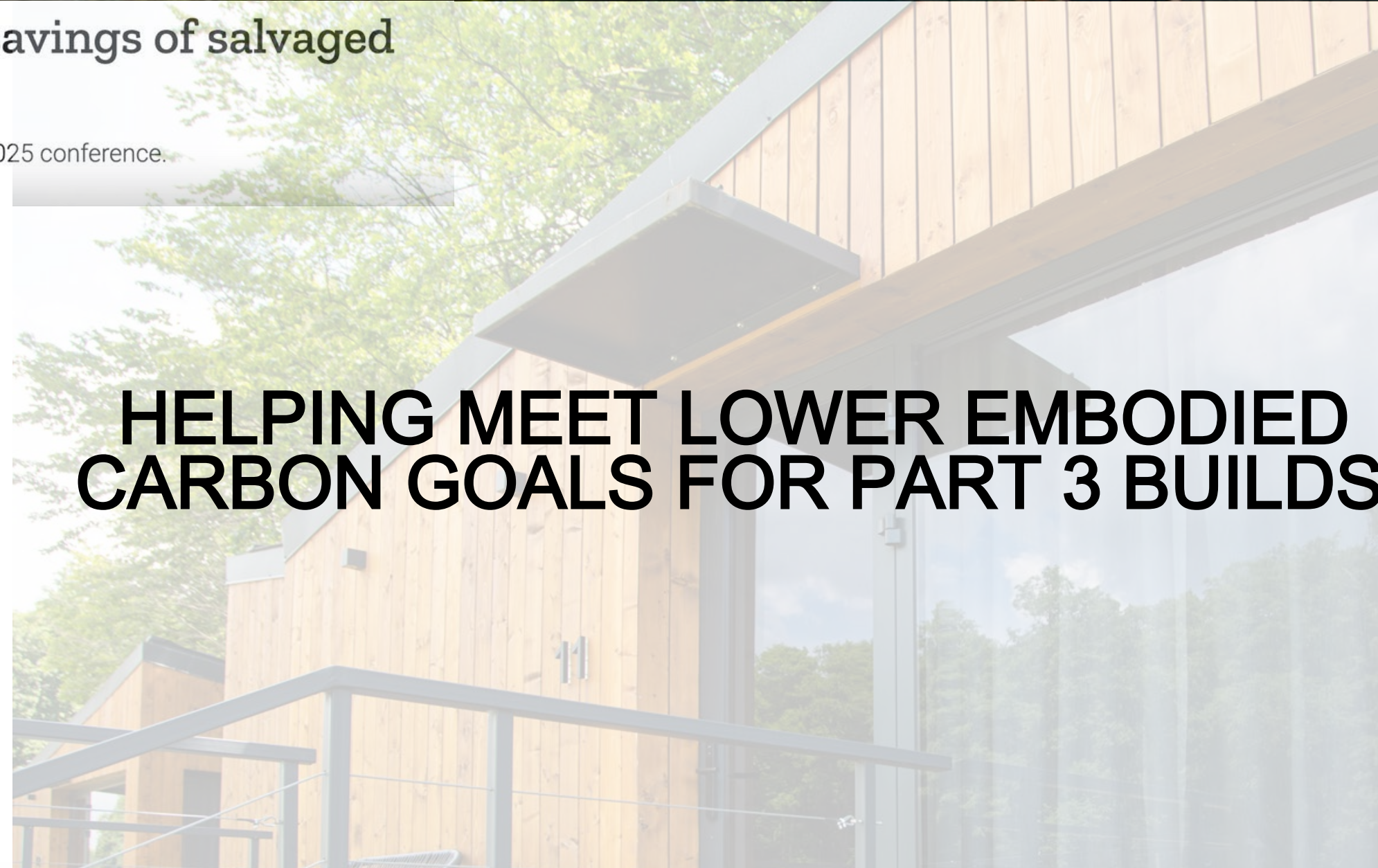
## LOW-CARBON MATERIAL SOURCING GUIDE

### Build Reuse receives EPA funding to track emissions savings of salvaged items

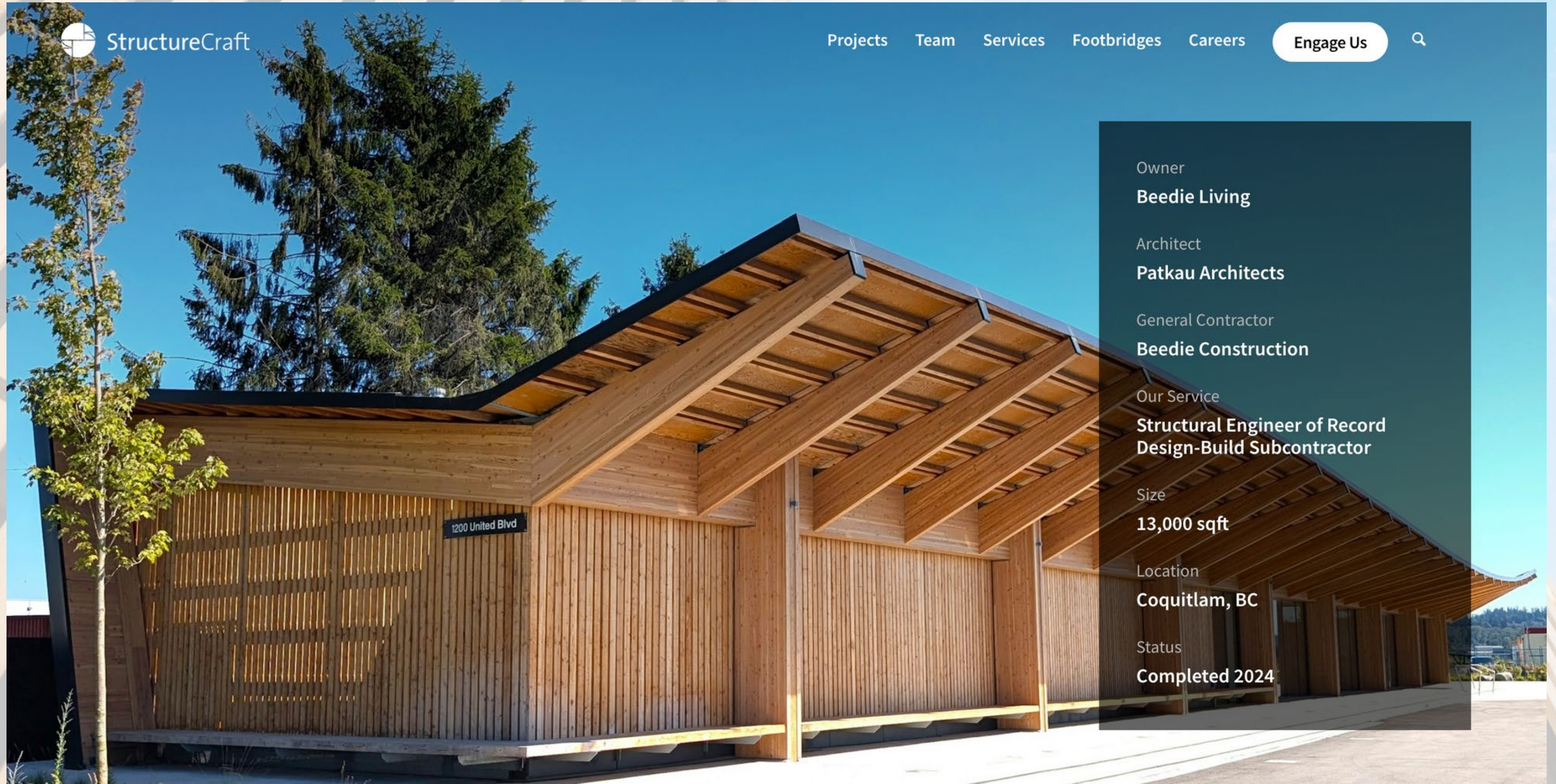
Deconstruction and reuse association also selects St. Paul, Minnesota, as site of its 2025 conference.



### HELPING MEET LOWER EMBODIED CARBON GOALS FOR PART 3 BUILDS



# MASS TIMBER BUILD WITH DOWEL LAMINATED TIMBER USING RECLAIMED LUMBER



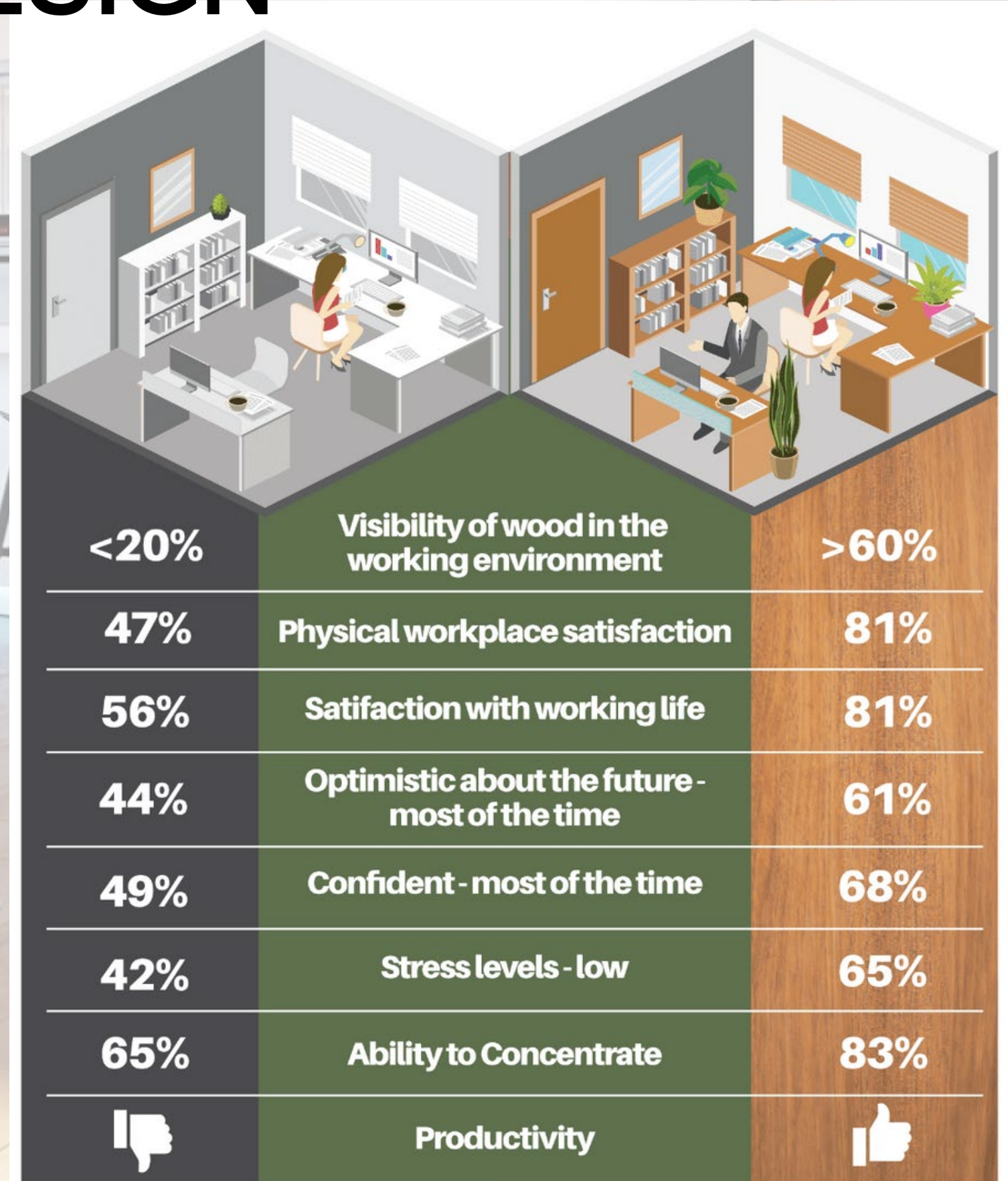


# TINY HOMES BUILT BY FIRST NATIONS HOMEBUILDER USING RECLAIMED LUMBER



# BIOPHILIC DESIGN USING RECLAIMED LUMBER TO HELP WITH MENTAL HEALTH AND DESIGN

Stress-reducing  
effects of wood  
and plants.





# V E M A

DECONSTRUCTION

## SUSTAINABLE DEMOLITION



### **BENEFITS OF SUSTAINABLE DEMOLITION**

### **ABATEMENT DECONSTRUCTION CONCRETE REMOVAL**

Innovative Methods for Sustainable Demolition resulting in similar prices and timeline as conventional demo.

### **WASTE DIVERTED FROM LANDFILL**

Deconstructing a home not only helps in conserving landfill space but also results in reduced disposal expenses for the owner.

### **LUMBER FROM HOME IS DONATED**

The donation made by the owner not only benefits the local non-profit but also earns the owner a tax credit.

### **SUPPORTS THE LOCAL ECONOMY**

Your involvement helps create new industries and jobs that can significantly contribute to the growth and development of the local economy.

# Providing Sustainable end-of-use Municipal Landfill waste Wood Recycling Solutions and Recycled Wood Reuse Markets

Metro Vancouver | Solid Waste  
The Zero Waste Committee and Public/Technical  
Advisory Committee

November 06, 2024



Canadian Wood Waste Recycling Business Group (CWWR)



# Canadian Wood Waste Recycling Business Group.

## Introduction

The Canadian Wood Waste Recycling Business Group (CWWR) is a national sole-proprietorship for profit membership environmental organization uniting top global environmental leaders, businesses, institutional partners, and Canadian governments to build their respective businesses in the advance the Canadian Wood recycling industry by providing essential social-economic, environmental business development resources!

## CWWR Leadership and Development Services

CWWR is transforming Wood recycling into a nationally recognized industry focused on environmental stewardship and economic impact. Our mission is to establish a federally regulated, policy-driven sector with carbon offset incentives, supported by the Canadian Federal government. As industry leaders, the CWWR Business Group sets the standard for innovative, sustainable Wood recycling solutions across Canada.



Canadian Wood Waste Recycling Business Group (CWWR)



# The Canadian Wood Recycling Industry (CWR)



## The Canadian Wood Recycling Industry (CWR)

The Canadian Wood recycling industry is on track to become Canada's fifth major environmental recycling powerhouse, led by CWR's global members, business leaders, institutional partners, and Canadian Federal and Provincial governments.

## Our Waste Wood Materials Industry

In Canada, all FORESTRY debris—slash, log sort yard waste, wildfire remnants, beetle-infested timber, end-of-use manufactured C&D, municipal LANDFILL waste wood—are 100% recyclable.

These natural resources offer significant economic, social, and environmental benefits.



# All end-of-use waste Wood is 100% recyclable.

## All end-of-use waste Wood is 100% recyclable.

Recycling in Canada through the Lens of the Circular Bioeconomy.

### Recycling of waste Wood

Community, Regional potential recycled Wood markets include initial ROI - feedstock for compost, landscaping, biochar, fuel for energy generation, animal bedding, drilling waste absorbent, and soil amendments and many more sustainable applications, all relevant to project location.

Achieve the economic, social, and sustainable environmental business objective of recycling all waste Wood.



# Waste Wood diversion and valorization: the sustainable recycling opportunity

1. Extending municipal Landfill lifetime

2. Reducing resource waste

3. Reducing landfill GHG emissions

4. Creating value from discarded resources through the recycling of sustainable, renewable waste Wood



5. Diversifying the economy

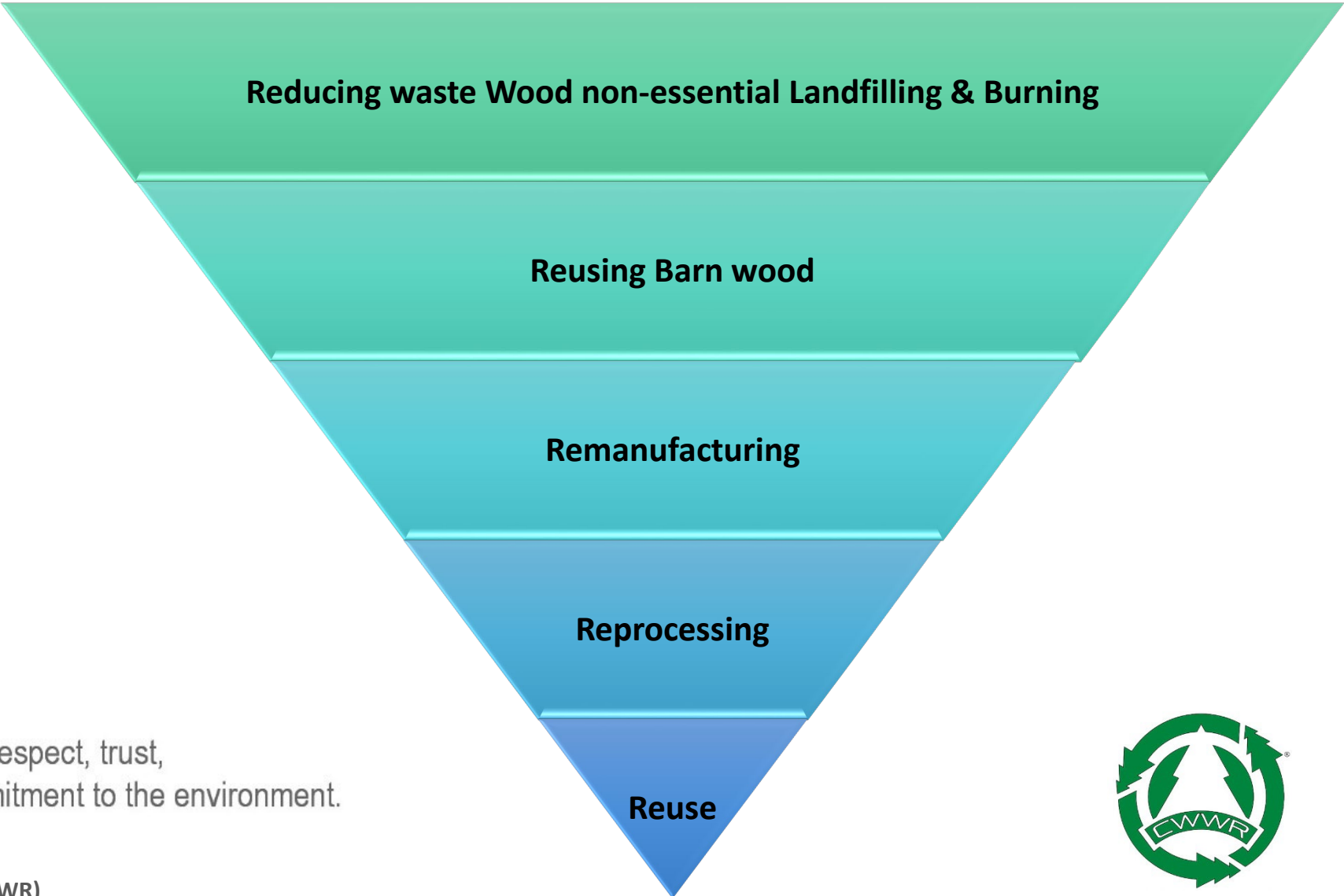
6. Attracting new business and investment, creating jobs and contributing to GDP

7. Contributing to community capacity and resilience through training opportunities and local business

8. Supporting Indigenous reconciliation, waste-to-energy, self-sufficiency and participation in Landfill and Forest sector supply chains



# Waste Wood recycling hierarchy



**THE PLEDGE** We are building partnership respect, trust, self-determination, and commitment to the environment.



# Landfill Wood Waste Reduction: Pathways



## We Are Connectors

Rooted in Alberta and across Canada, we unite people, businesses, and government to spark new opportunities in the Canadian wood recycling industry.

## We Are Changemakers

We challenge the status quo and inspire innovation, driving environmental resilience through sustainable practices and collective action.

## Unleash the Potential of Waste Wood for Lasting Economic Impact!

Together, let's transform waste Wood into economic power—creating jobs, driving sustainability, and building a stronger, greener future. By advancing the Wood recycling industry, we deliver lasting socio-economic and environmental benefits across Canada.

rethink **WOOD** recycling   
All waste **WOOD** materials are 100% recyclable! 

Canadian Wood Waste Recycling Business Group (CWWR)



# Transforming waste Wood into Profit: Our Key to Success in Canada's Waste Wood Recycling Industry

BE  
ORIG  
INAL

Maximize your Financial profit in Canada's Wood Recycling Industry.

Our results-based "**Cart-Before-the-Horse**" strategy puts market demand first by identifying viable reuse markets for recycled Wood before large-scale collection or processing. By prioritizing market needs upfront, we ensure every recycling project is efficient, targeted, and impactful.

Each project begins with a feasibility and pilot study to confirm demand in local and regional reuse markets. Once validated, we assess factors such as Wood volume, Tree species/types, moisture content, collection methods, transport logistics inbound & outbound, ROI, processing requirements, and specialized recycling equipment.

This strategic, market-aligned approach enables us to transform a majority of Forestry debris, end-of-use manufactured Landfill waste Wood, and other waste wood sources into valuable sustainable climate change resources, driving environmental progress and economic growth across Canada—from local communities to regional and national scales.



# The Canadian Wood Waste Recycling Business Group.

Connection Leadership



CANADIAN WOOD  
WASTE RECYCLING  
BUSINESS GROUP.



CANADIAN WOOD  
RECYCLING  
INDUSTRY.

## CWWR Business Group., Membership Invitation 2025

We invite you, to secure a results-driven 2025 membership with the Canadian Wood Waste Recycling Business Group (CWWR)

The remainder of 2024 is inclusive.

This membership will elevate your community business activities as a leadership in Canada's Wood Recycling industry and position you and company as a key player in providing sustainable waste Wood recycling solutions.

In return for your supportive membership, and upon your ongoing written request, we will provide your company, with the essential in-kind ongoing business development resource tools required to expedite your related business growth in the Canadian Wood recycling industry.



# Questions / Contact



James A. Donaldson,  
CEO | SME Consultant  
**Canadian Wood Waste Recycling Business Group. C(WWR)**  
Stony Plain, Alberta. CANADA

W. [www.cdnwoodwasterecycling.ca](http://www.cdnwoodwasterecycling.ca)

YT. <https://youtu.be/BuZzWtnNJik>

LinkedIn. <https://www.linkedin.com/in/james-a-donaldson-920a1a36/>

**R5 Rethink - Recover - Reduce - Reuse**  
**THINK WOOD Waste Recycling**



# Canadian Wood Waste Recycling Business Group. (CWWR)

Let's connect for a 30-minute Discovery call to  
explore how CWWR can elevate your business.

## Thank you!

<https://cdnwoodwasterecycling.ca>

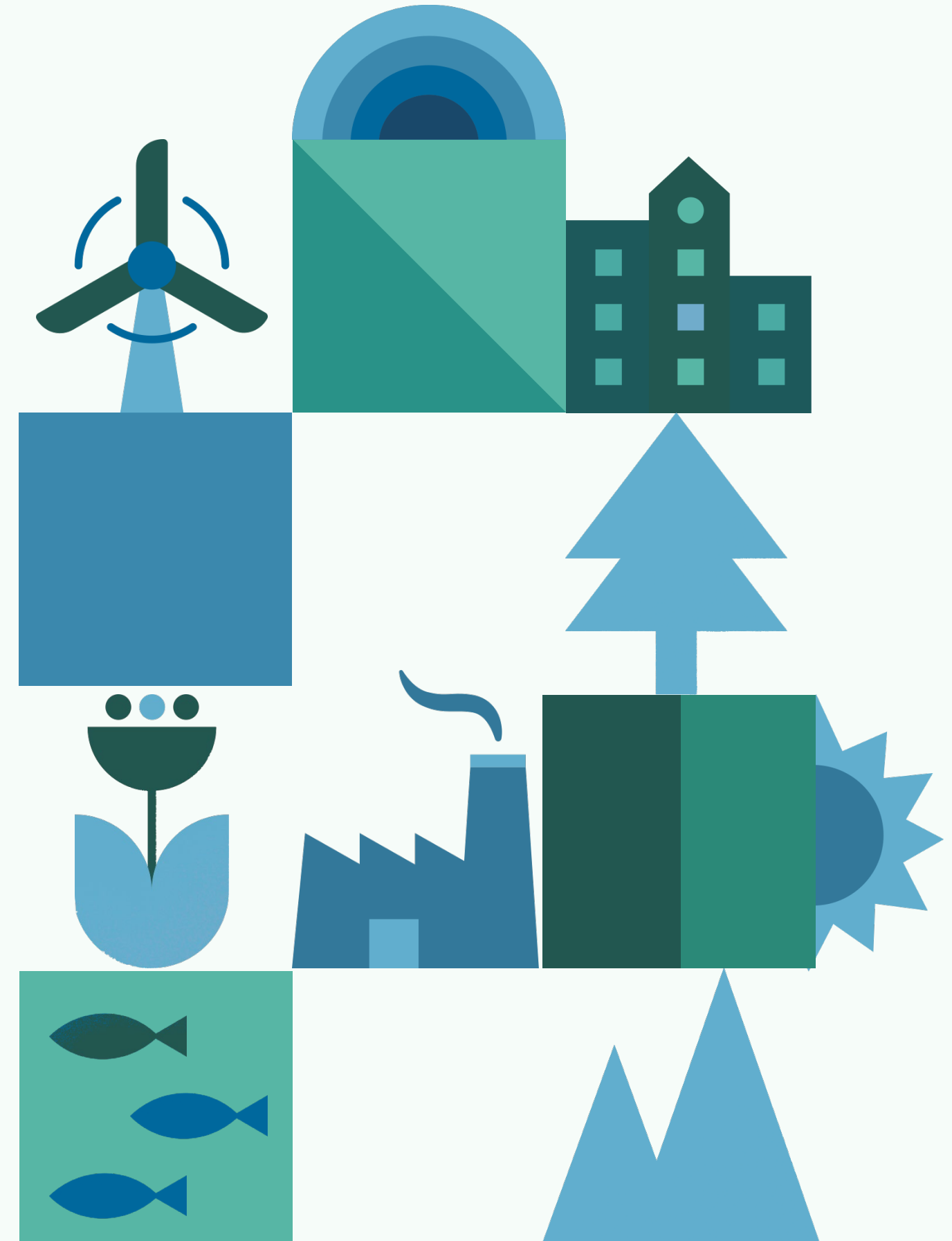




**KIAM**  
CONSULTANCY

# EMPOWERING NEW IMMIGRANTS AND FIRST- GENERATION CANADIANS ON WASTE MANAGEMENT

Cultivating Awareness, Inspiring Change,  
Shaping a Sustainable Metro Vancouver



# Snapshot of Metro Vancouver's Immigrant Population

41.8% of the population, or 1,089,180 residents, are immigrants, including 154,815 (14.2%) recent arrivals who immigrated between 2016 and 2021 (Census 2021).

Most immigrants in Metro Vancouver come from China (18.8%), India (13.9%), and the Philippines (10.0%), reflecting the region's diversity.

56% of recent immigrants in Metro Vancouver speak a non-official language at home, with top languages including Mandarin (14%), Punjabi (8%), and Tagalog (8%). In comparison, only 51% of the population speaks English as their mother tongue.





# Empowering Immigrant Communities for Sustainable Impact



## Develop Multilingual, Culturally Relevant Resources

Tailor waste management resources in key languages to ensure accessibility and cultural relevance.



## Host Community-Driven Workshops

Offer workshops that cover the dos and don'ts of recycling and composting, encourage lighter living and empower participants with the knowledge to actively participate in waste management.



## Promote Pathways to Green Careers

Collaborate with organizations to introduce immigrants to sustainability careers, enhancing diversity in green jobs.

**Thank you!**



Ditch Disposables

Cody Irwin, B. Eng

Founder & CEO

[cody@sharewares.ca](mailto:cody@sharewares.ca)





**4,700,000,000,000**

**Pounds of waste is dumped on  
our planet annually**

Governments globally  
are **banning** single-use  
plastics



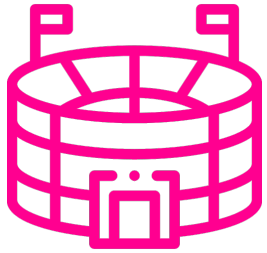
**StrongerBC**  
for everyone



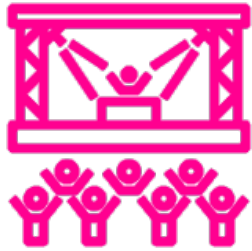
share wares  
RETURN FOR REUSE  
1 @ SCAN ME! @ 1  
PFNT8YE

share wares  
RETURN FOR REUSE  
1 @ SCAN ME! @ 1  
924JYUE

# Proven Globally



Stadiums



Festivals



Cafes



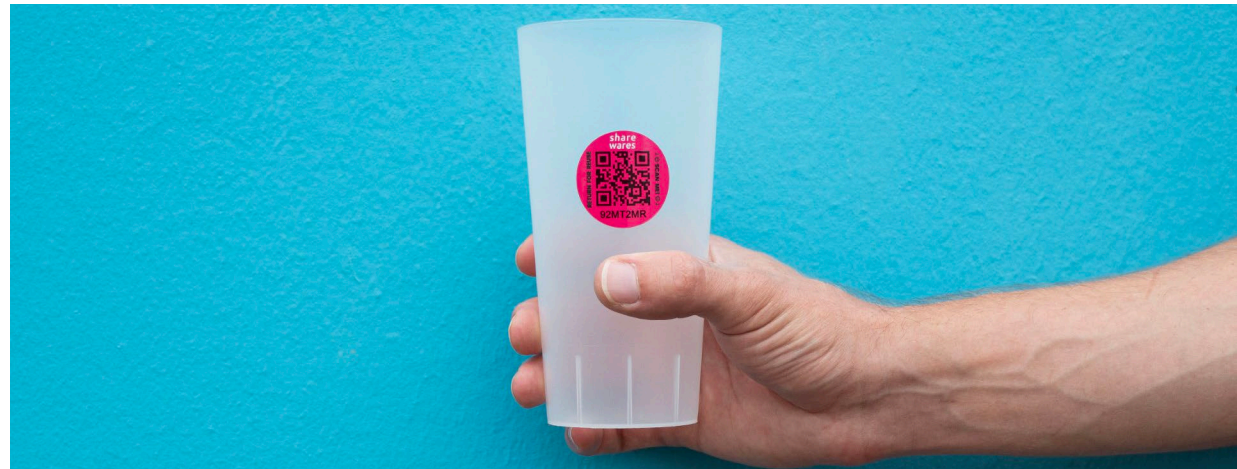
Restaurant



Grocery

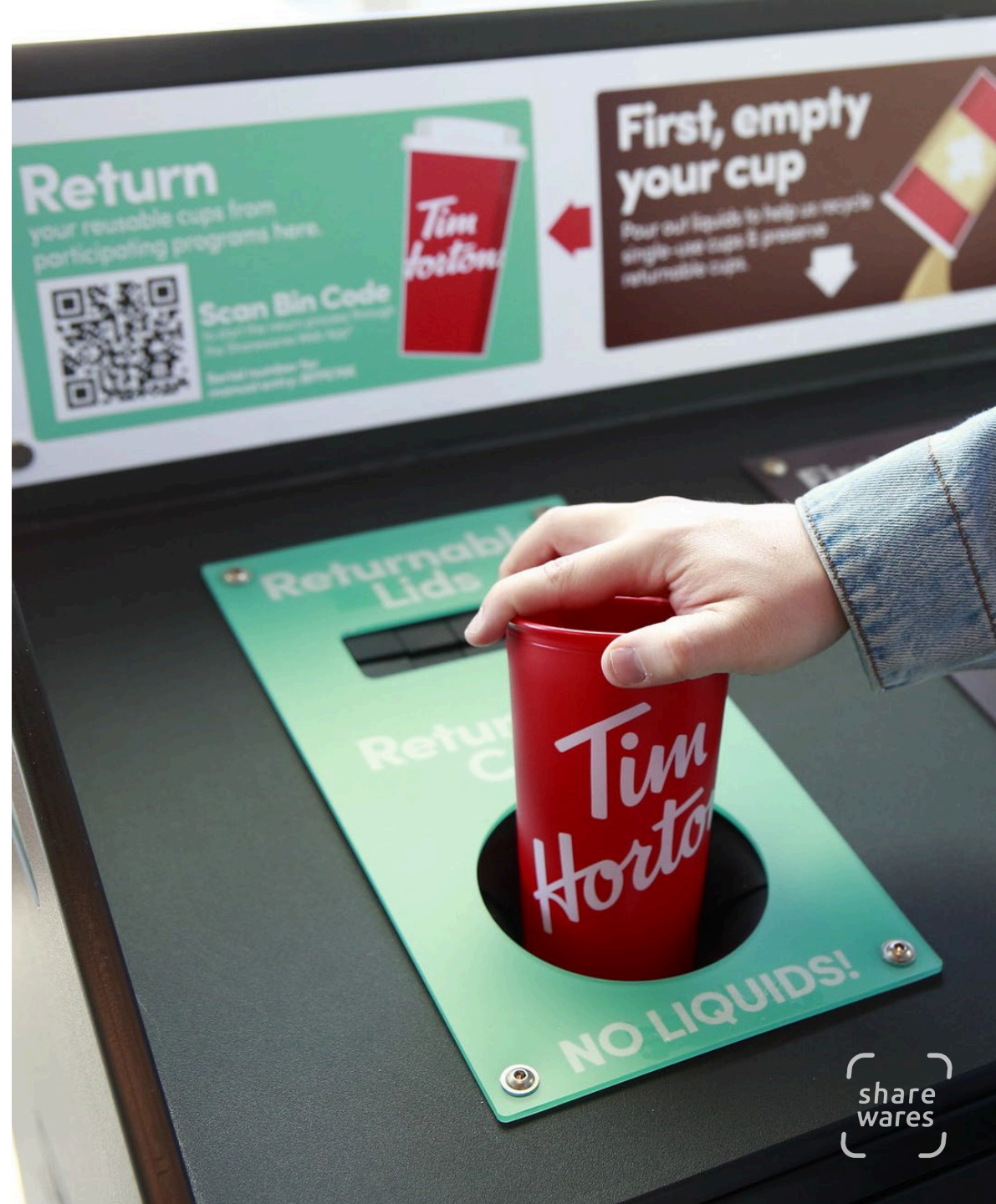


Event Venues





# Just a Few Supportive Brands

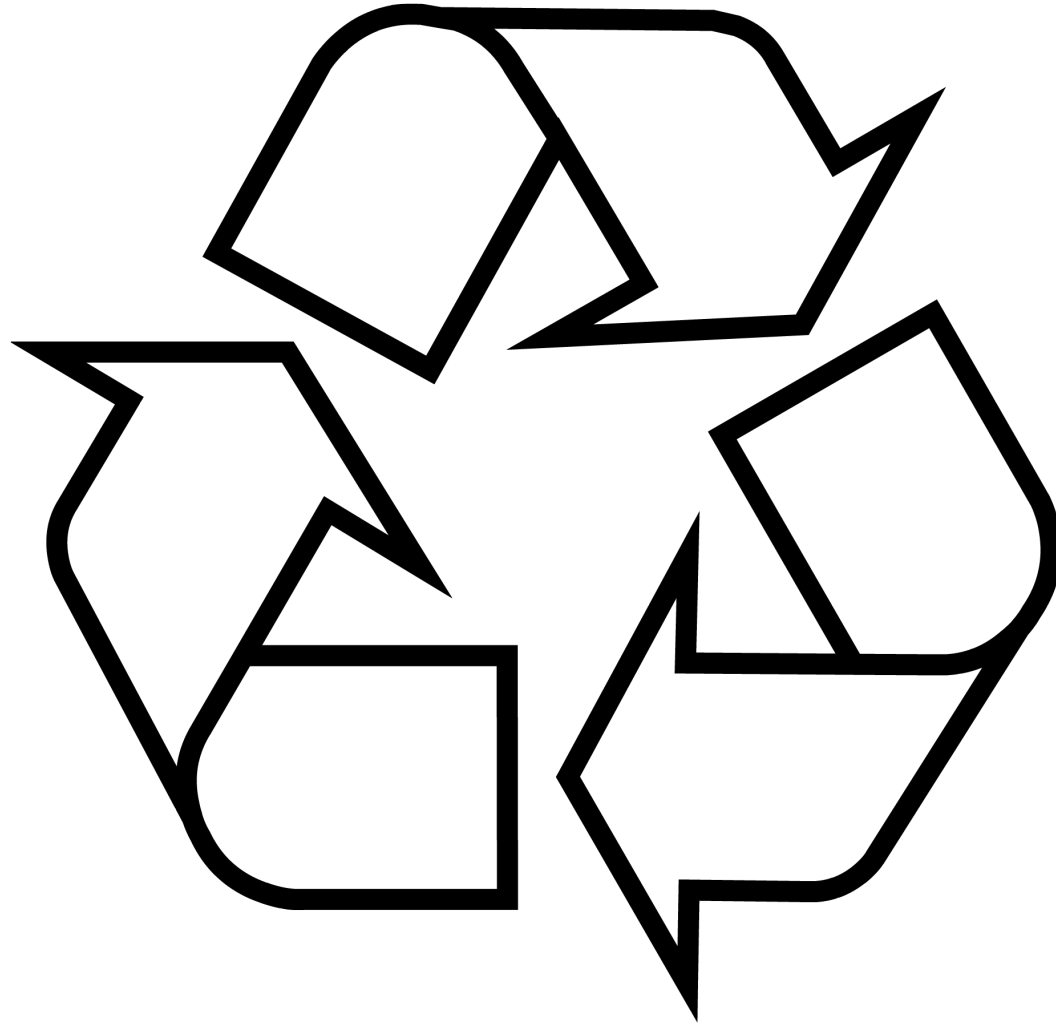


We Can Kick  
Our Nasty  
Habit



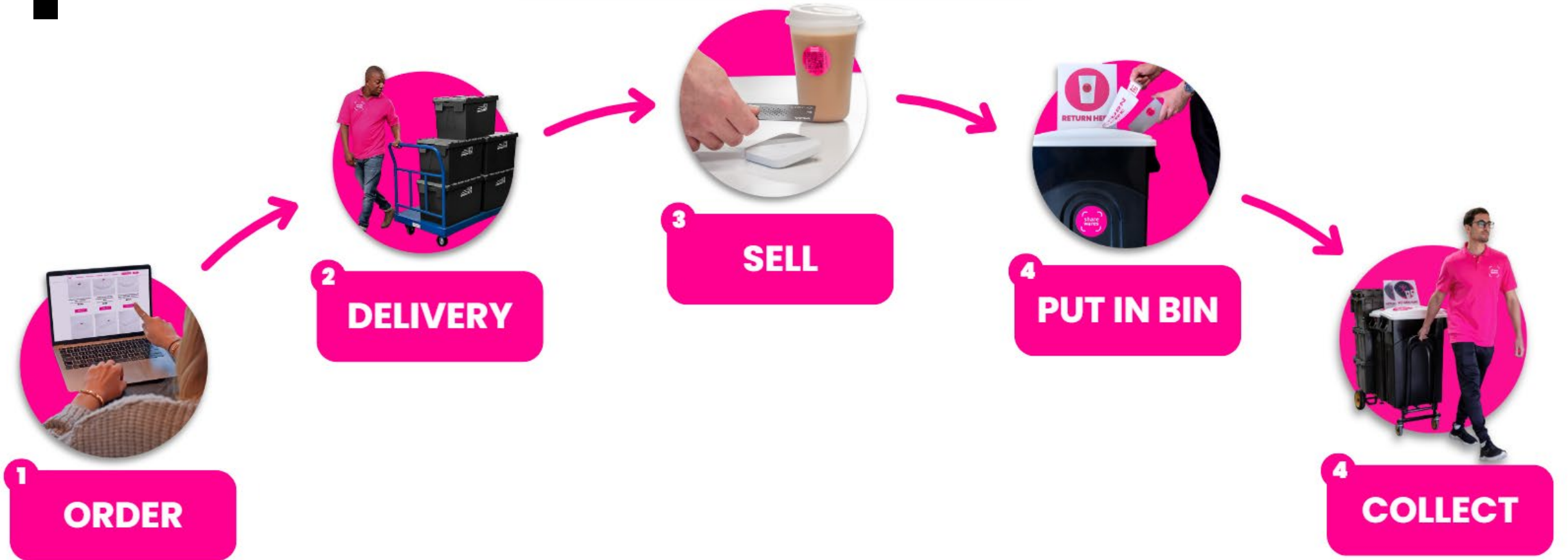


Current Approach is Unsustainable





# Just Like Single-Use



# How Reusables Work



Not So Distant Future





share  
wares





McNeilus

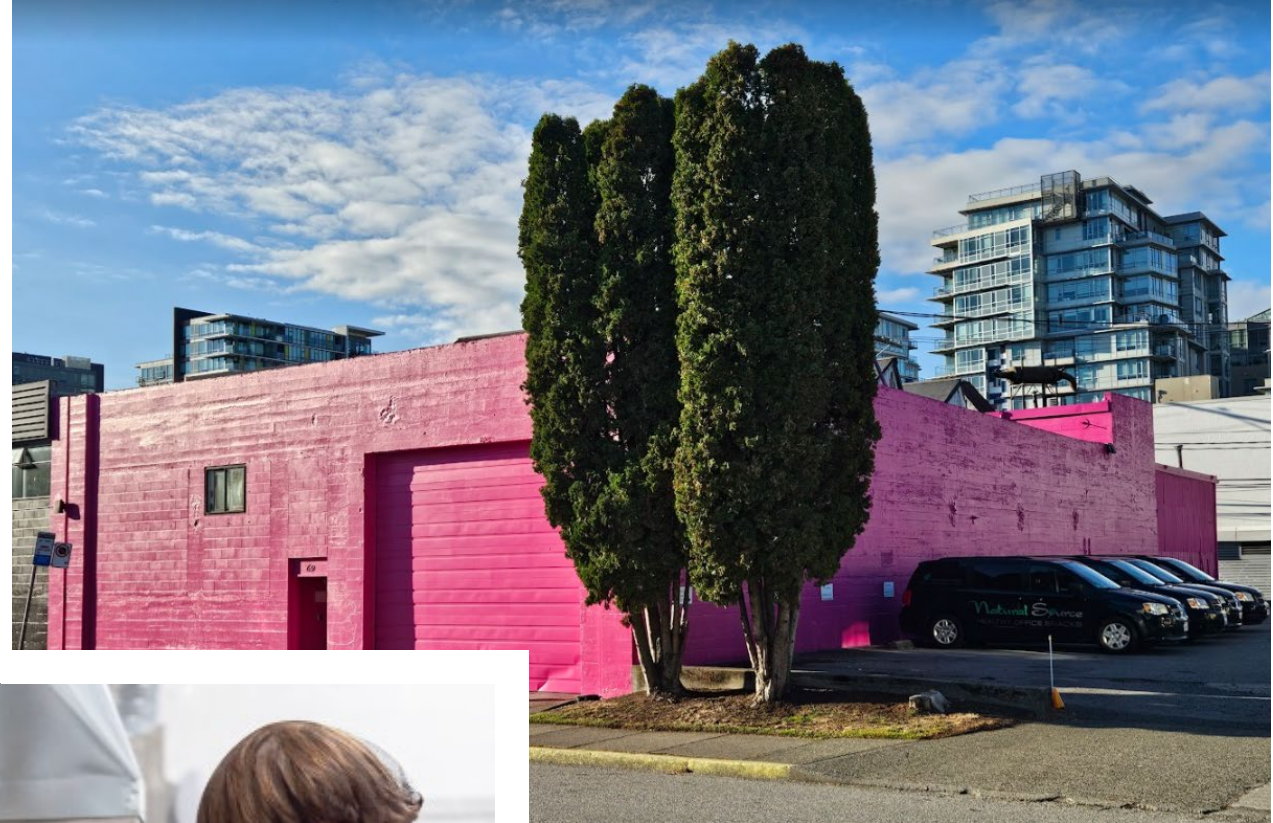
WM  
WASTE MANAGEMENT  
THINK GREEN

59903

Boynton  
Beach, FL  
USDOT 856351FL

**WM**  
WASTE MANAGEMENT  
Last year we recycled  
enough paper to save  
over 41 million trees.





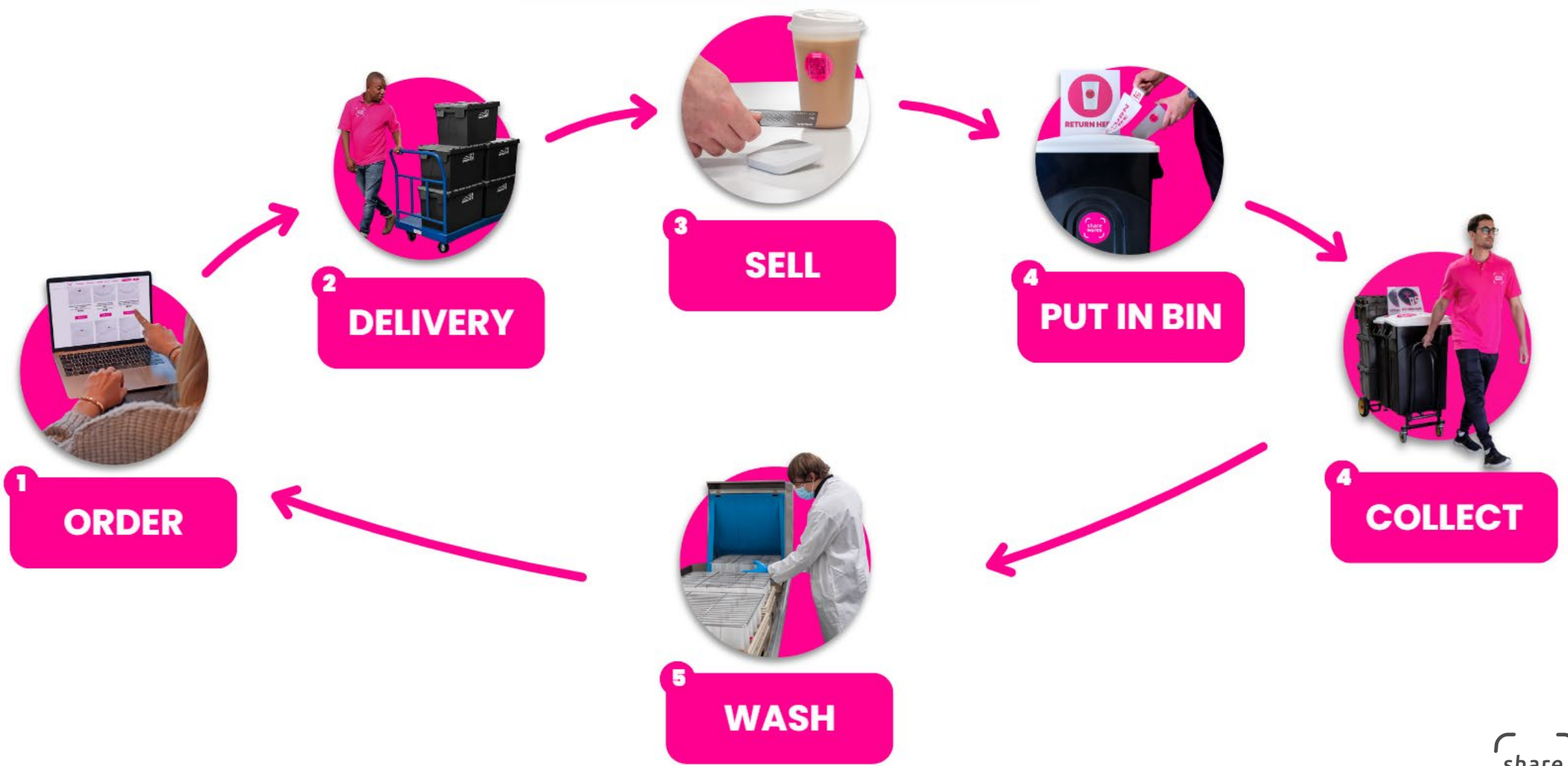




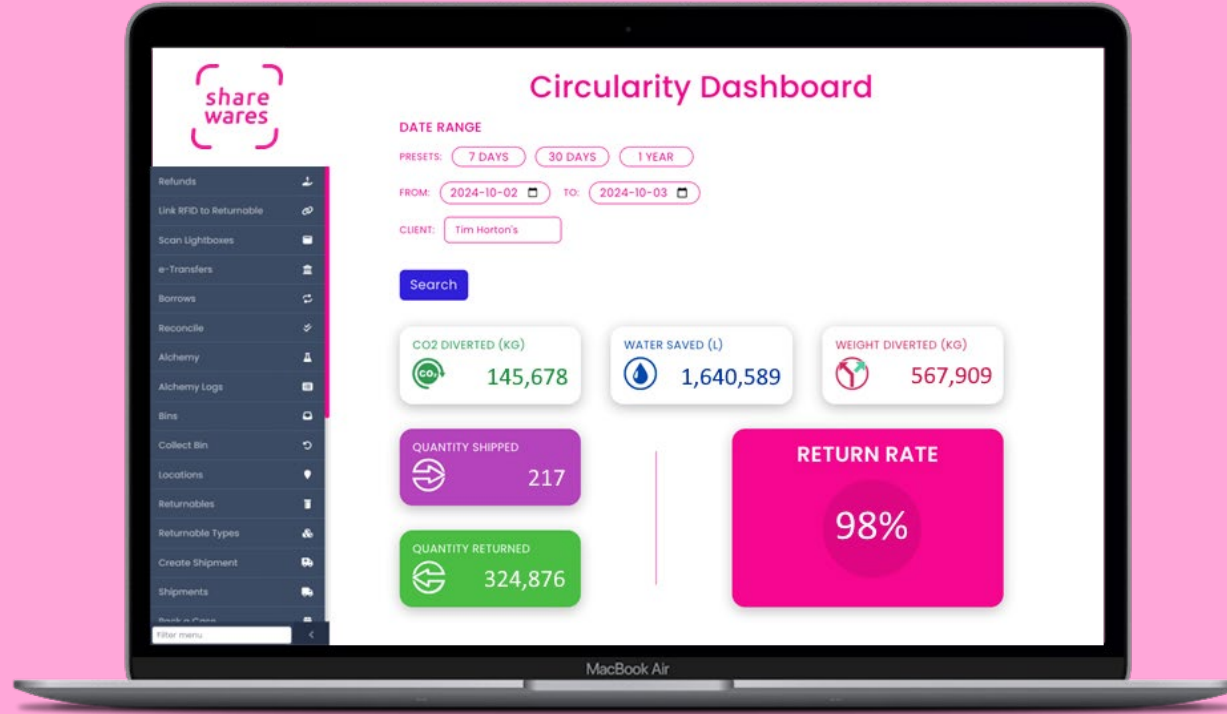


share  
wares

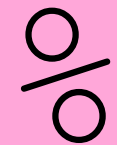
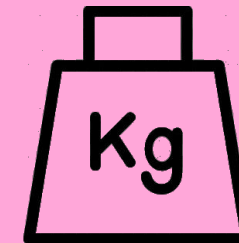




# Measurable Impact & Data Tracking



Tracking & Reporting



This is all  
possible now if..



A dark background image featuring a family of three (a man, a woman, and a child) celebrating with their arms raised. They are surrounded by falling confetti and various party supplies like balloons, streamers, and plates. The overall tone is festive and celebratory.

North American Packaging Market

**\$300 Billion**

But Wait...

There's More

# Big Picture

Initial Market



Packaging



Textiles



Transport

Expansion



All Non-Consumable  
Consumer Goods





# share wares

**A sustainable future is  
easier than you think!**



Cody Irwin, B.Eng  
Founder & CEO  
Vancouver, BC



8.2.

1



9.4.

1



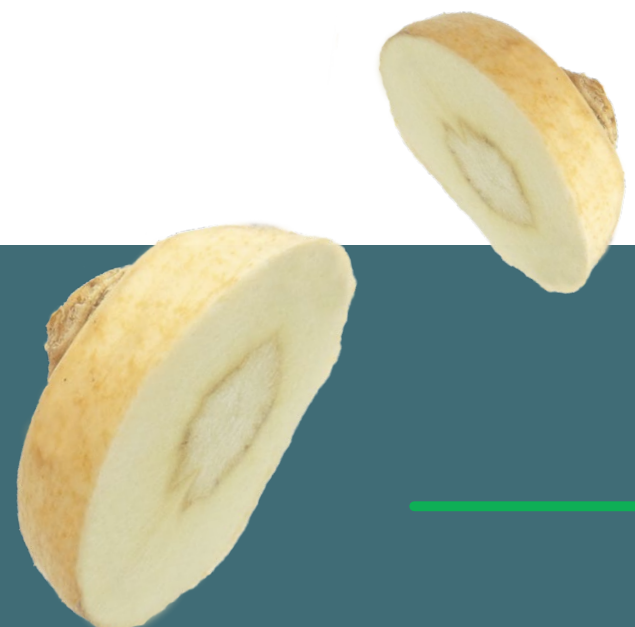
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.1



13.2

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# ECOSAFE<sup>®</sup>

Z E R O W A S T E

Harnessing the Power of Compostable Film Products

Metro Vancouver



# ECOSAFE®

## ZERO WASTE



- Based in Surrey, British Columbia
- North America's leading certified compostable film products
- Serving residential, commercial and institutional markets.





# ECOSAFE®

ZERO WASTE



Compostable  
Film  
Products



Sorting  
Bins



Food Scrap  
Collection  
Programs

Improving the overall effectiveness of waste diversion programs!

# EcoSafe® Certified Compostable



## Lab-tested Certification

Biodegradable Products Institute (BPI)

- No PFAs



## Field-tested Certification

Compost Manufacturing Alliance (CMA)

- In-vessel, ASP, Windrow approved

# Sources of Food Contact Packaging Contamination in Compost Feedstocks

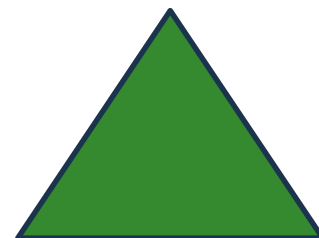
## Commercial



✓ CERTIFIED COMPOSTABLES

Dine-in food service ware  
Closed loop venues  
Contamination from systems set up issues,  
“look alike”, procurement policies

Generally, 0-30% of inbound  
volume

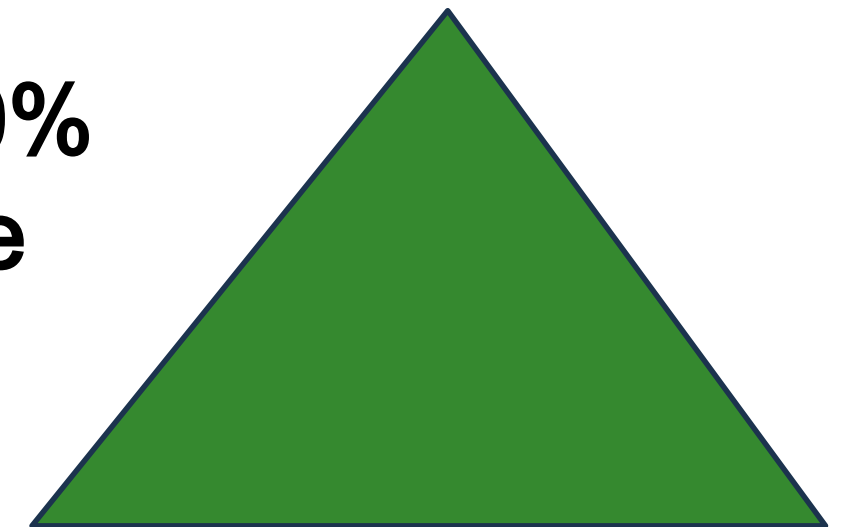


## Residential

**NO COMPOSTABLES!**

“Look alike”  
Increase in traditional plastics around food  
Grocery bags (film plastics)  
Increase in “take-out” deli from grocery

Generally, 70-100%  
of inbound volume



# EcoSafe Supports Metro Vancouver's Organic Waste Diversion Goals

Since 2022, EcoSafe has served:

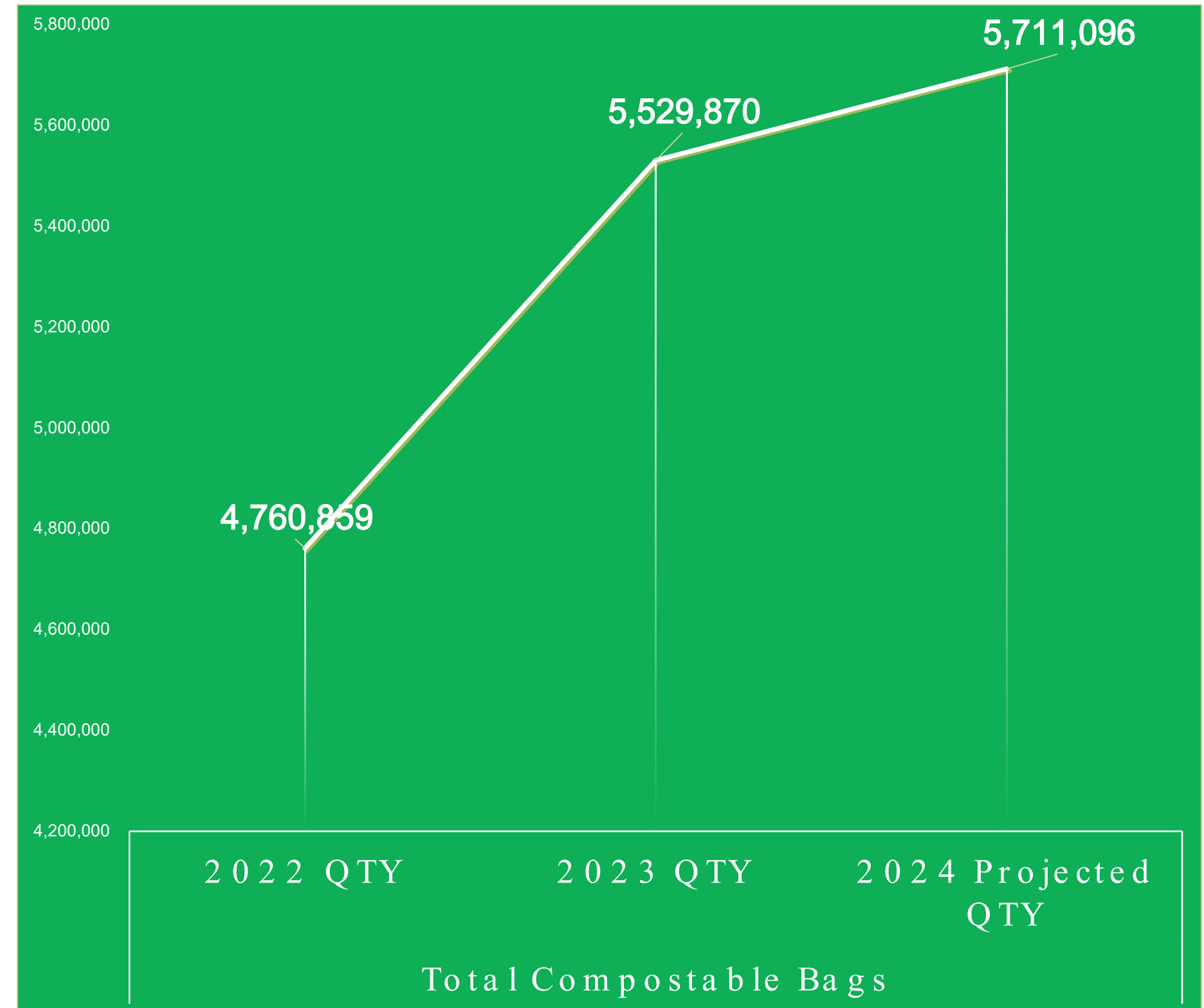
160,000+  
cases of certified  
compostable  
liners sold

135  
MultiRes  
customers

16 Million  
compostable  
liners



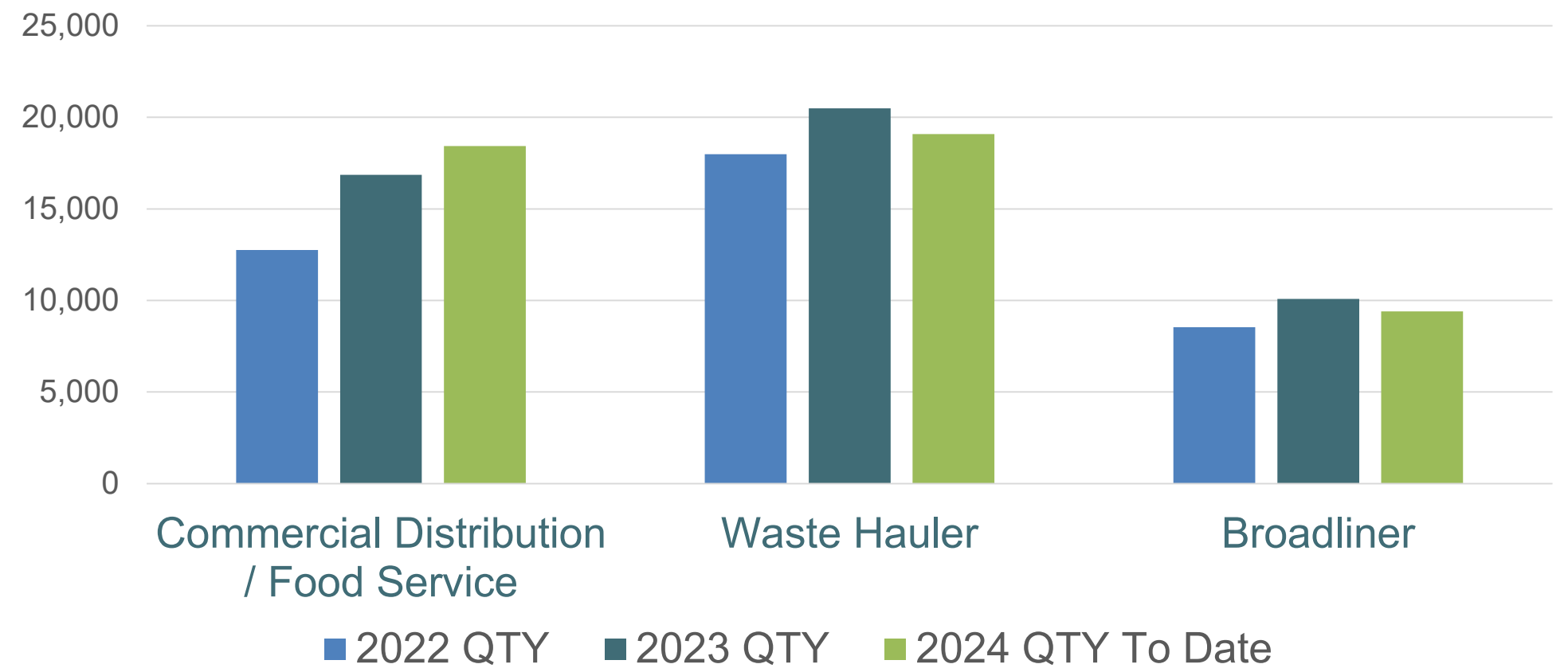
Demand for compostable liners is growing in Metro Vancouver





In key areas where food waste is generated, compostable liners make the collection process more efficient and less contaminated.

### Eco Safe Compostable Bag Sales in Metro Vancouver by Customer





# Where Compostable Liners Go, Collection Grows!

**#1** Increase participation and reduce contamination.

**#2** Establish clear standards for compostable products, making it easier for processors to identify and process them.

**#3** Collaborate with haulers, composters, and municipalities to ensure there's adequate capacity for organic material processing and recovery.



# EcoSafe Performance: Outlast Starch-Based Alternatives



Paper  
Bags



Starch-based  
Compostable  
Bags



EcoSafe  
Compostable  
Bags

## Long-Lasting Performance

The smarter, cleaner choice. Heat resistant too!

## Fewer Liners Needed

Reduce waste by using fewer bags is more cost-effective.

## Odour-Free Assurance

Unlike starch bags, EcoSafe bags prevent odours even when organics are added.

Thank you ☺

Lettuce  
Compost  
Together!

@ecosafezw      
www.ecosafe.green



SAMMY DAVIES

Sustainability Programs Manager

SUSAN THOMAN

Compost Manufacturing Alliance  
Managing Director/ CFO





# Lettuce Learn More!

Read: EcoSafe Blog & Case Studies  
[www.ecosafe.green/blog](http://www.ecosafe.green/blog)

Watch: EcoSafe MultiRes Program  
[www.ecosafe.green/multires/](http://www.ecosafe.green/multires/)

Watch: Compost Chats w/ Sammy and Gary  
[www.youtube.com/watch?v=S0XCWWSgjks](http://www.youtube.com/watch?v=S0XCWWSgjks)

Watch: How to Line the Bin Right  
[www.youtube.com/watch?v=X8MAKSTlt6c](http://www.youtube.com/watch?v=X8MAKSTlt6c)

Get Inspired: Watch “The Compost Story” by Kiss the Ground  
[www.youtube.com/watch?v=bqDQD8cvO5Y](http://www.youtube.com/watch?v=bqDQD8cvO5Y)

Right fit guide and bag size calculator: [www.ecosafe.green/bag-calculator](http://www.ecosafe.green/bag-calculator)

# Municipal e-Waste Hub: A Sustainable Exchange Platform

Connecting industries for resourceful reuse of electronics and equipment.

by **Yasaman Delkash**



METRO VANCOUVER

# Concept Overview

1

## Centralized Hub

Online platform on municipal websites for e-device exchange.

2

## Reuse Facilitation

Companies access available equipment before new purchases.

3

## Sustainable Impact

Promotes eco-friendly practices and cost savings across industries.



# Categories & Classifications

Type	Condition	Usage
Computers	Operational	New
Medical Devices	Refurbishable	Lightly Used
Industrial Tools	Parts-Only	Moderately Used
Office Electronics	Recyclable	Heavily Used







# Key Sectors & Contributions



## Healthcare & Biotech

Medical and laboratory equipment exchange.



## Construction & Manufacturing

Tools and machinery resource sharing.



## IT & Telecom

Computers and networking gear circulation.



## Education & Public Services

Office, lab, and support equipment distribution.

# Platform Benefits

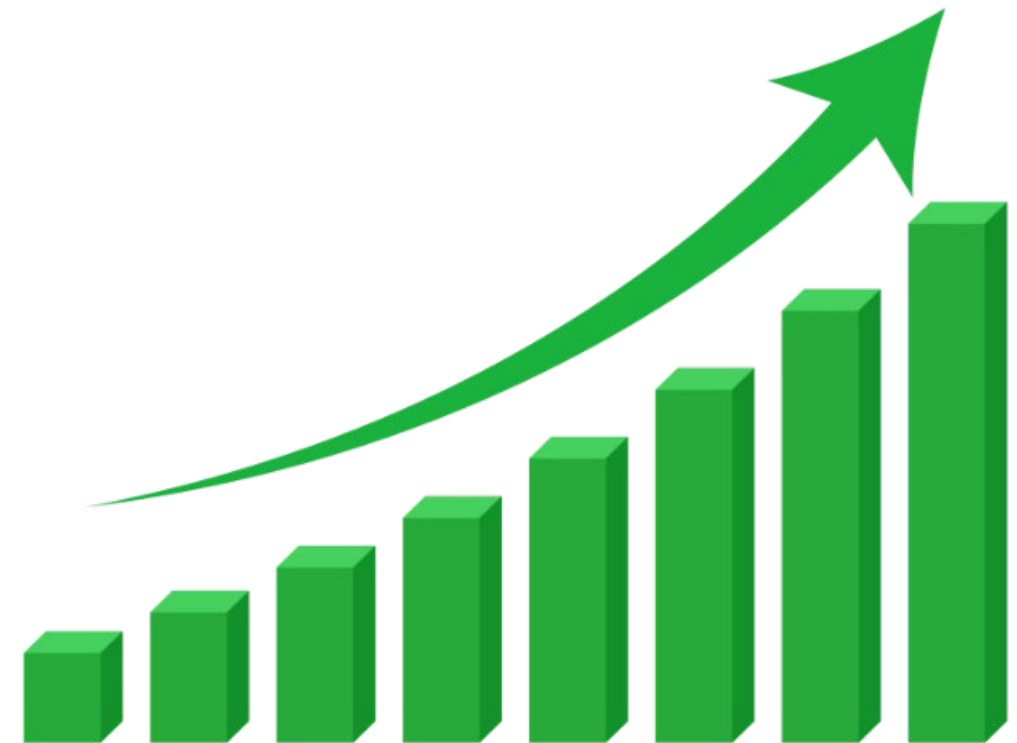
## Environmental Impact

Significant reduction in e-waste and carbon emissions.



## Cost-Efficiency

Businesses access affordable used equipment, boosting economy.



**Thank you!**





# CIRCULARITY:

## Full Circle Solid Waste to Finished Materials Program

prepared for

Eloy, Az

**10/31/24**

### **Development Team**

Envision Waste Services, LLC

Prescott Composites, LLC

Frontline Bioenergy, LLC

# Paradigm Shift from Waste Management...



# ...To Materials Management via a Circular Economy

**Combining advanced mixed waste processing and end use manufacturing, approximately 90% of the City's solid waste can be transformed into new finished products**



# Benefits To Our Approach

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# Potential Benefits to the City of Eloy

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- Allows the City of Eloy to achieve high levels of recycling and sustainability (approximately 90% of the City's waste)
  - Easy to implement
    - Only requires 1x/week collection vs the current 2x/week collection
  - Driver for future business attraction and economic growth
  - Improves quality of life
  - Positions Eloy as a "City of the Future"
- Offsets the need to operate the City Landfill
- Direct development of over 1000 new, permanent, high-tech jobs

Note: no investment required from the City of Eloy. All that is required is the flow control of the City's waste.



# What Makes Us Different Than Traditional Landfill and Recycling Programs or WTE programs?

- Our Focus is on manufacturing **High Value Commodities** that will Propel our Future
  - Carbon Fiber, Composite, Graphene
  - Green, Renewable Energy
  - R-PET
  - CO2 Capture and Sequestration
- Zero Waste/Carbon Capture/Sequestration

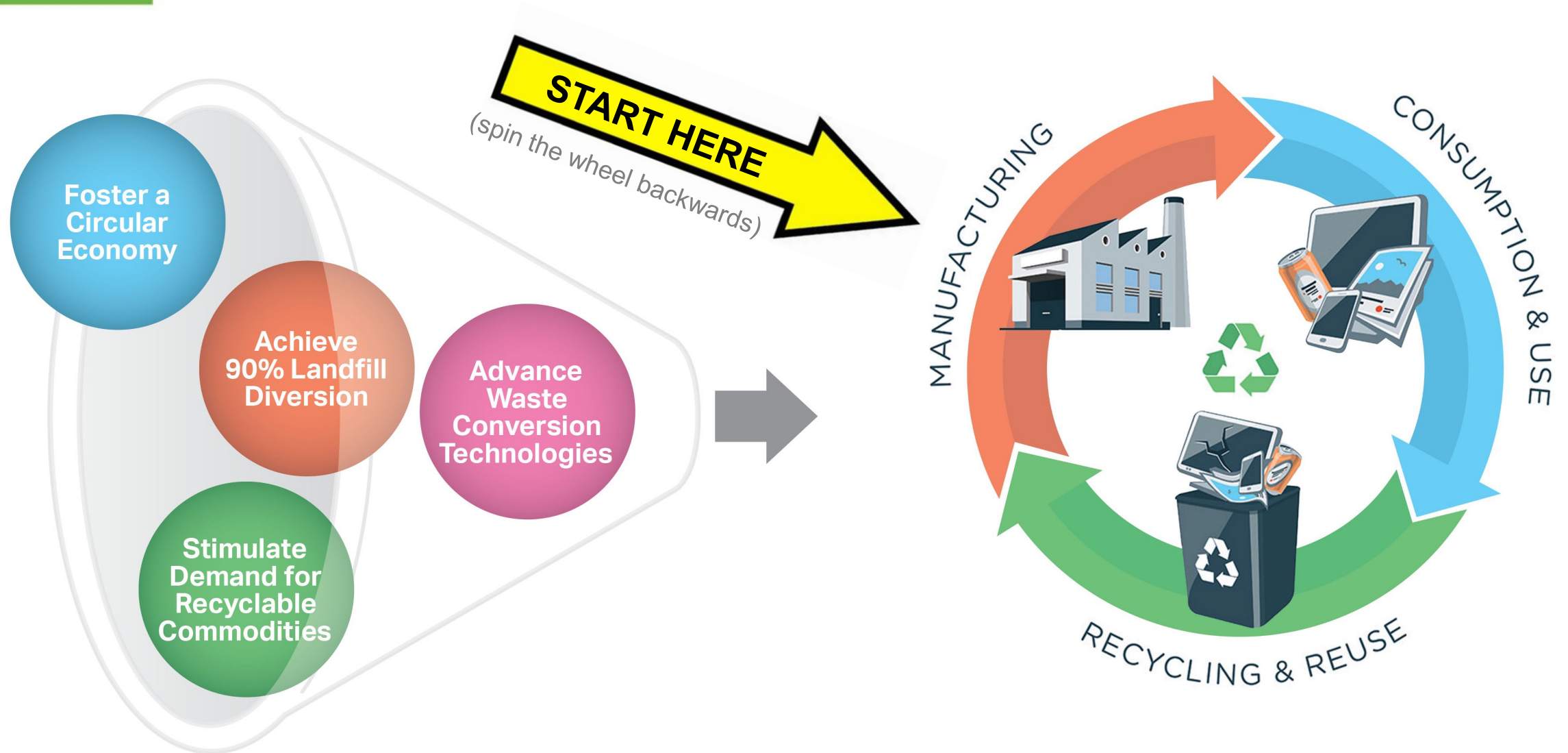


## Overview / Usage

When I think of the future of innovation, graphene is it. Everything will head towards Graphene. From batteries to frames of materials. I could see Graphene in almost everything as a replacement for plastic and steel. This build is trying to spread awareness towards the next materials used to build the next supercomputers as well as everyday things. Graphene should be the next thing we use daily.

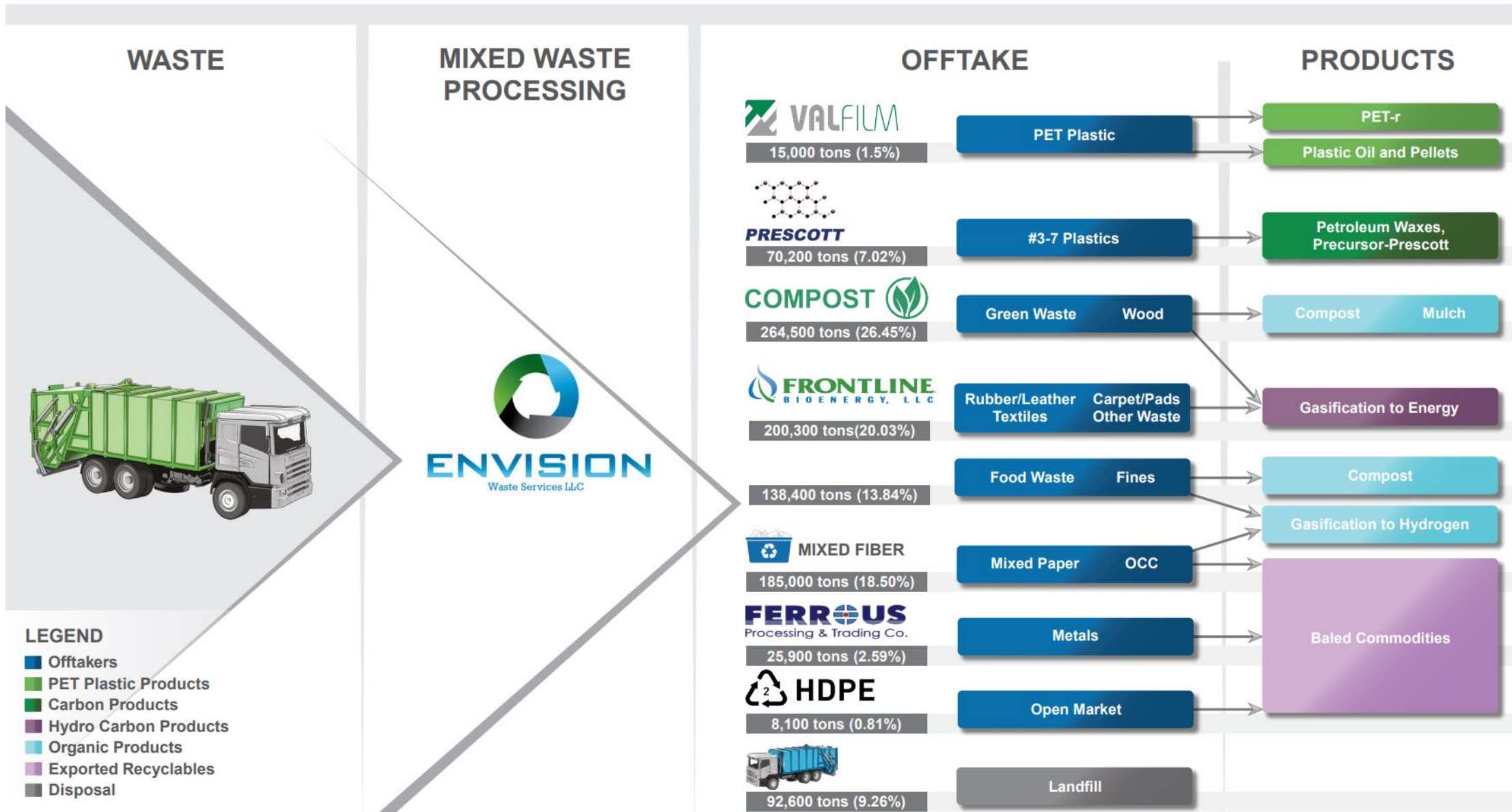
<https://insiders.intel.com/projects/graphene-is-the-future>

# Key: Market Centric Approach



CIRCULAR ECONOMY

# CIRCULAR MIXED WASTE ECONOMY



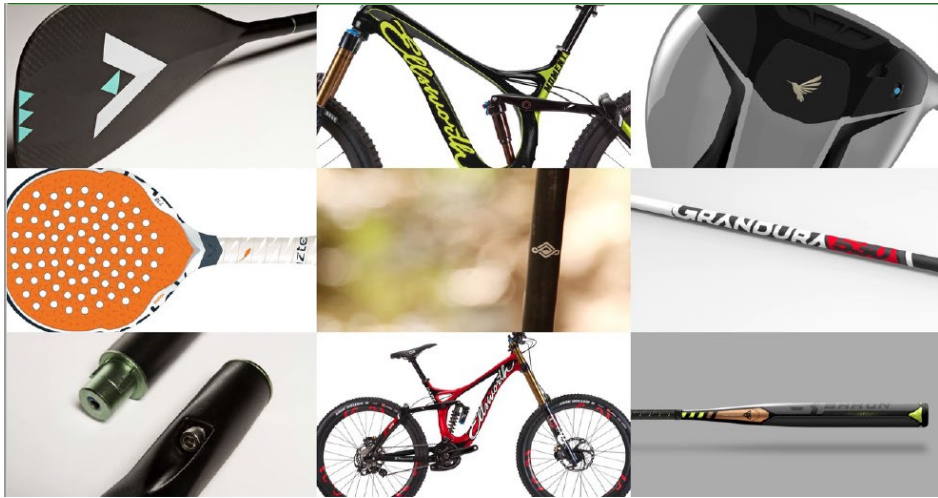
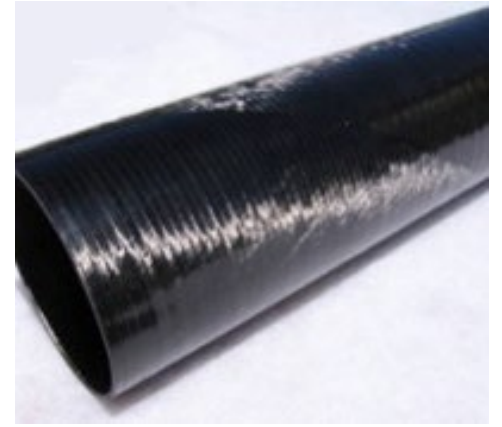
# Experience: ENVISION WASTE SERVICES

- **Envision is the only firm in America that has 21 years of continuous mixed waste processing experience**
- 17 years of solid waste compost experience
- Only firm in Ohio to ever permit and operate a solid waste compost facility
- 21 years of waste transfer experience
  - 4 different locations – 2 states
- Technology leader
  - Awarded 2 United States Patents for waste sorting equipment as well as many trade secrets
- Exemplary Safety Record
  - Statistically more than twice as safe as the industry average



# Prescott Composites

# PRESCOTT COMPOSITES



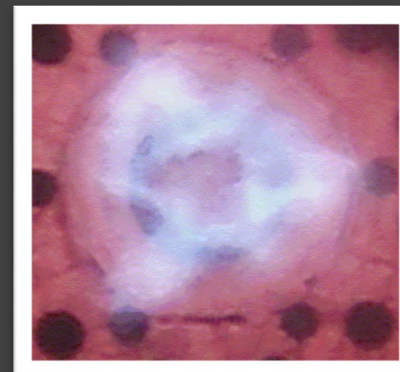
- Prescott Composites, a Wyoming LLC, was founded by Randy M. Beck, Gary D. Beck, and Pat Walsh to develop low-cost carbon fiber and carbon fiber intermediates
  - Former owners of HST, Inc., HST Aerospace, HST Automotive and Iso Nano International. Carbon composites business for 30+ years each, produced 40,000,000+ advanced carbon structures for sports & leisure, automotive, aerospace and military markets.
  - Customers included Boeing, Shelby America, Bombardier, Ping, Callaway, Taylor Made, Cobra, Trek, Spenergy, US Military, & more
- Jay Batten, 48+ years of high-level business experience at GM/Delphi, Dana Corporation and VP of the National Composite Center.





*Capture the energy ⚡ Release the potential*

- Designed, built, and operated the largest agricultural gasifier in the USA (CVEC)
- Stine Seed 50tpd pyrolysis plant to produce pyrol oil and bio char
- 150 tons/day wood chips into Fischer-Tropsch diesel and jet fuel



# Advanced Recycling (Plastics)



# Economic Development

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- Direct Employment
  - Our circular green economy campus will provide over 1000 new, permanent skilled jobs
  - Over \$1 billion in capital investment
- “Next Ring” indirect employment
  - Next ring manufacturing companies who use carbon fiber, graphene, and hydrogen will want to locate near the circular green economy campus
    - Auto, aerospace, EV’s, EV battery manufacturing, hyperscaler data centers, and more
  - Next ring estimated at a 5x multiplier

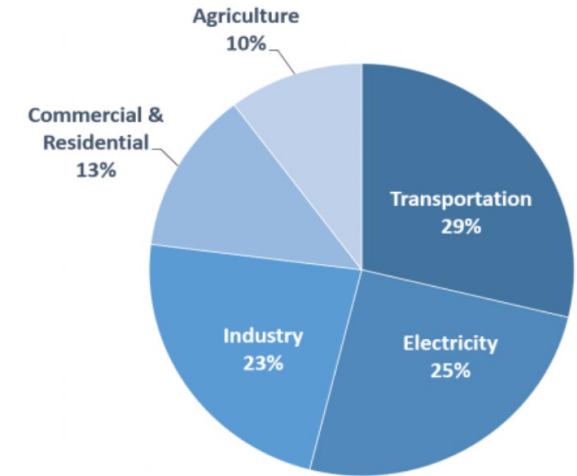


# Improving the Environment

- Environmental Benefits
  - Zero Waste
  - Significant Reduction of landfill emissions
    - Methane
    - CO2
    - Leachate
    - PFAS
- Reduced Transportation Mileage
  - Waste collection route mileage cut by nearly 50%
  - Recycling commodity transportation virtually eliminated
- Establish Eloy as a “Sustainable City”
  - Business attraction
  - Business retention
  - Improved quality of life
  - Positioned for future growth

<sup>1</sup>Source: “USEPA, Sources of Greenhouse Gas Emissions 4/14/21”

Total U.S. Greenhouse Gas Emissions  
by Economic Sector in 2019



Total Emissions in 2019 = 6,558 [Million Metric Tons of CO2 equivalent](#). Percentages may not add up to 100% due to independent rounding.



# THANK YOU

Contact Information:

Steven M. Viny, CEO

Envision Waste Services, LLC

23250 Chagrin Blvd,

Beachwood, Ohio 44122





Questions?

# 10 YEARS OF PACKAGING AND PAPER EPR IN BC

Multifamily Focus: Metro Vancouver



**RECYCLEBC**<sup>TM</sup>

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# WHO WE ARE

Recycle BC is a not-for-profit organization responsible for residential packaging and paper recycling throughout British Columbia.

**Serving two million households or 99.4% of BC.**

**First** full extended producer responsibility (EPR) program for packaging and paper products in North America.



CELEBRATING 10 YEARS  
**RECYCLEBC™**



# PROVINCE-WIDE SYSTEM

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196  
communities

227  
depots

41  
post-  
collection  
facilities



# MULTI-FAMILY NETWORK: METRO VANCOUVER

---

10

Municipalities with  
Multi-Family  
Programs

3

Private  
Haulers  
Servicing  
Metro-  
Vancouver

4

Direct  
Service  
Multifamily  
Programs (as  
of 2025)

38 Depots and 18 London Drugs  
Locations

# MULTI-FAMILY NETWORK: METRO VANCOUVER

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Over 419,000  
Multi-Family

households managed through the Recycle BC program throughout Metro Vancouver (end of 2023).

93% of all Multi-Family Households in Metro Vancouver.

Based of 2021 census data, using the two Census categories:

- 1) Apartments in Buildings that has fewer than five storeys
- 2) Apartments in a building that has five or more storeys



# NEW OPTIONS FOR MULTIFAMILY COLLECTION

- Partnerships with multi-family collectors working combined residential and ICI routes to provide incentive for residential collection.
- Creating an agreement to work with the business models of private haulers.
- Capture multi-family tonnage currently outside of Recycle BC program.



# NEW COLLECTION CONTRACTS INCLUDE MORE MATERIALS

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Multi-Family Collection Fee		
	Collection Type	\$ per Multi-Family Household per Year
<input type="checkbox"/>	Single-Stream – Mixed Containers and Paper and Cardboard	
<input type="checkbox"/>	Multi-Stream – Paper and Cardboard separate from Mixed Containers	
<input checked="" type="checkbox"/>	Flexible Plastics - which must be segregated from all other PPP	

# SEGREGATED FLEXIBLE PLASTICS COLLECTION



- West Vancouver Multi-Family (July 1, 2024)
- Maple Ridge Multi-Family (Jan 1, 2025)
- City of Vancouver Multi-Family (March 1, 2026)

# THANK YOU



## RECYCLEBC™

*Making a difference together.*



[RecycleBC.ca](https://RecycleBC.ca)



[@RecycleBC](https://twitter.com/RecycleBC)



[@RecycleBC](https://facebook.com/RecycleBC)

# GOATOTE x Vancouver

## Circular Solutions for Reusable Bags

Renee Lundahl  
Co-Founder  
COO



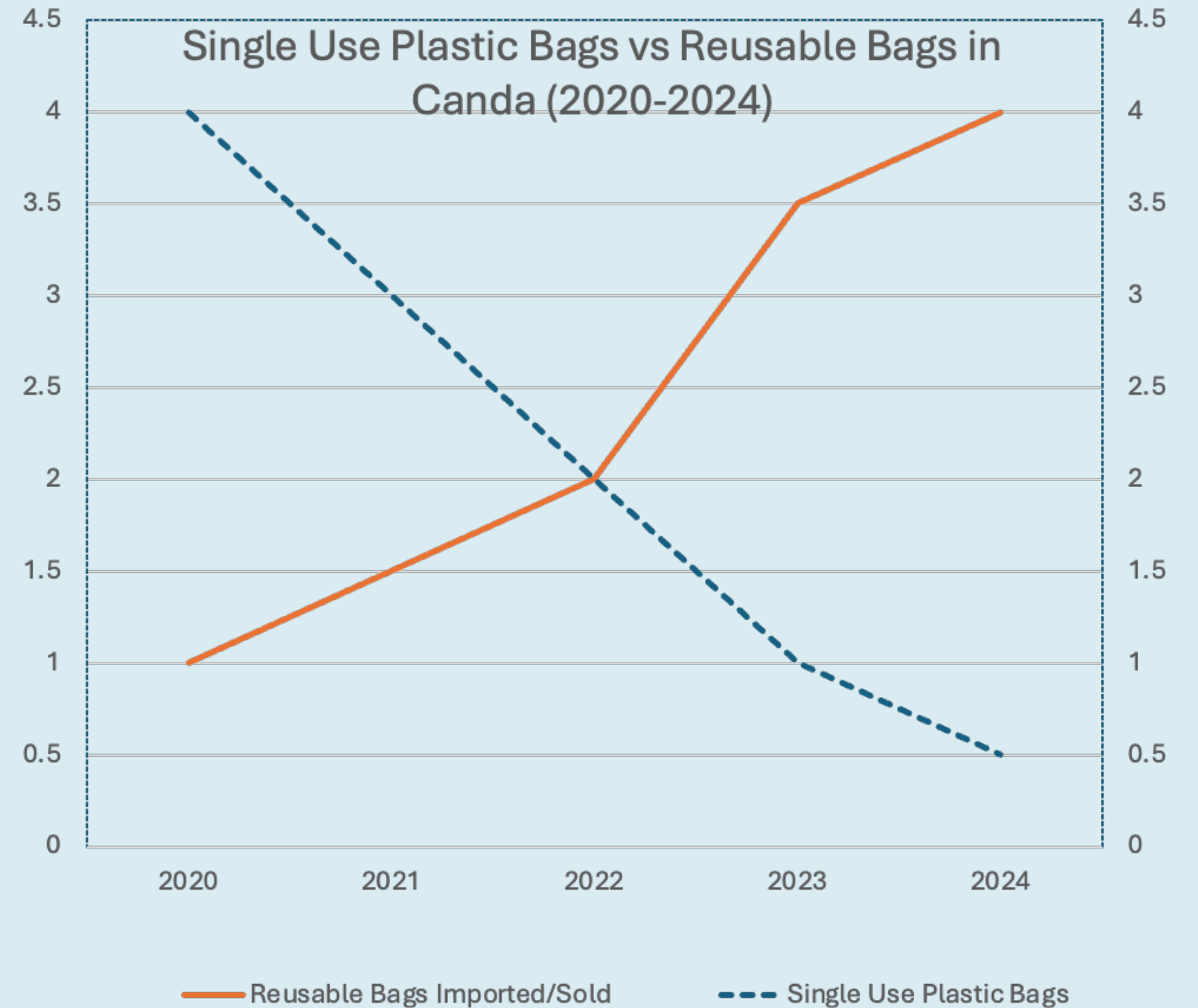
[www.GOATOTE.com](http://www.GOATOTE.com)

**GOATOTE**

The GOATOTE logo consists of the word "GOATOTE" in a bold, white, sans-serif font. Below the letter "O" is a white icon of a tote bag with a circular recycling symbol (three chasing arrows) on its front.

# Reuse as Single Use

- Consumer reliance from single use plastic to reusables
- Reusables treated as single use
- Overconsumption/e-commerce
- Reusable bag production
- Unintended Consequences



## Metro Vancouver's Zero Waste Initiatives for Reusable Bags

- Bags Donations to Vancouver Zero Waste Centre
- Redistribution to those in Need
- Additional Fees and Regulations
- Ability to Access Free Reusable Bags

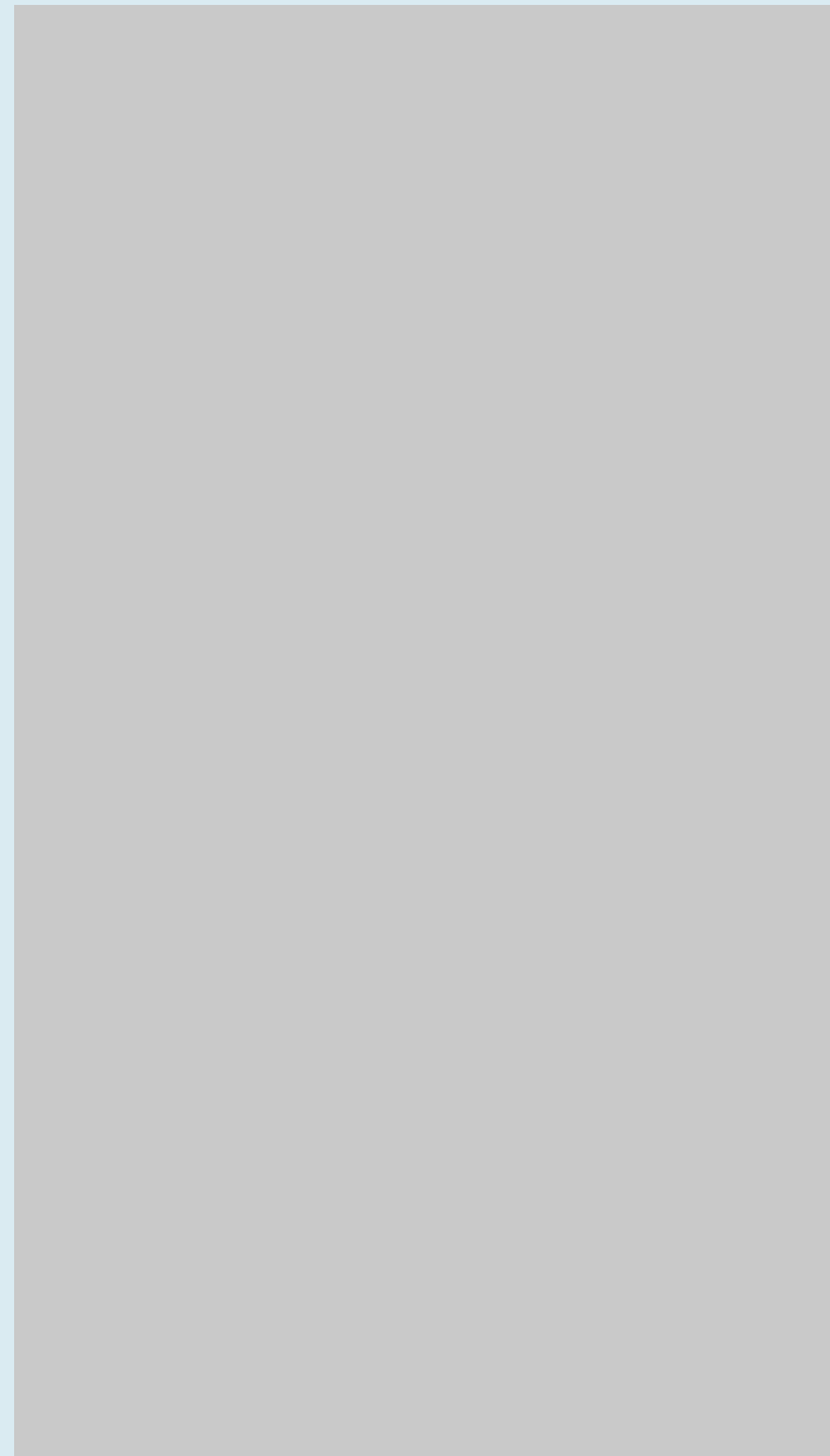
## What's Missing?

- Dedicated Reuse Service Provider
- Consistent and Convenient Return Options
- Sanitization and Quality Control
- Circular Redistribution System
- Sustainable End of Life Management
- Efficient Tracking System with the ability to measure and report outcomes



## Case Study: GOATOTE in New Jersey

**“Do we really  
need reuse  
programs for  
reusable  
bags?”**





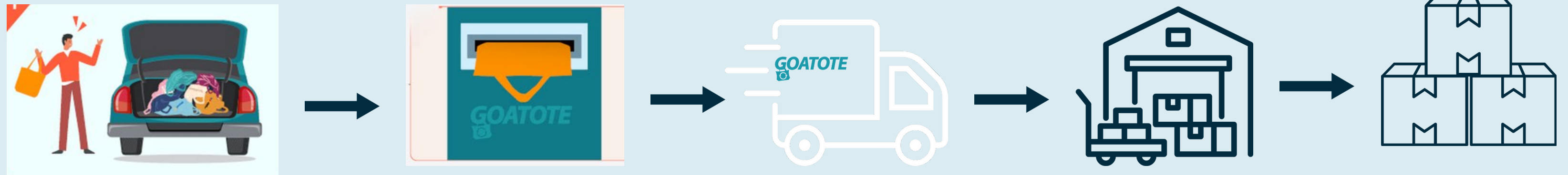
# Case Study: GOATOTE in New Jersey

- Multi-stakeholder Buy In
- Ongoing Demand for Reusable Bags From Food Banks and Food Pantries
- Proprietary Cleaning and Quality Assurance
- Efficient Logistics and Redistribution
- Social Impact
- End of Life Solutions
- Data Tracking for Impact Reporting



# HOW GOATOTE WORKS

GOATOTE Offers Turnkey Solutions for Circular Bag Reuse Systems



- Vertically Integrated
- Flexible Collection Options
- Education and Awareness Initiatives
- Bag Pickup Services/Logistics
- Local Processing Facilities

- Smart Redistribution
- Sustainable End of Life Management
- Impact Data Reports

# PROPOSED PARTNERSHIP FOR VANCOUVER



- Zero Waste Centers
- Retail Partnership
- City Wide Return Kiosks



- Estimated Bag Diversion Rates
- Reduction in Landfill Waste and Material Footprint
- Increase in Recycling After Reuse
- Support Zero Waste 2040



- Community Outreach
- Education
- Partnerships Benefits

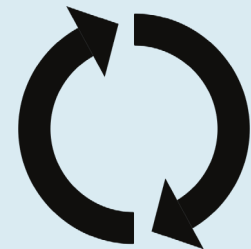


- Analyze Real Data
- Optimize Program
- Expand

# Call To Action



GOATOTE provides Vancouver with a comprehensive, sustainable solution for managing reusable bags and reducing waste



## NEXT STEPS: Pilot Opportunity

- Set Up Partnership Discussions
- Define Pilot Locations
- Develop Community Engagement Strategy

*Thank*  
**YOU**



[WWW.GOATOTE.COM](http://WWW.GOATOTE.COM)



**Eco Green Granule Enterprises Inc.  
Supporting Metro Vancouver's Waste Management Vision**

**Presented by: Alireza Akhoundi  
November 7, 2024**

# Eco Green Granule Enterprises Inc.

- **Who We Are:**

Eco Green Granule Enterprises Inc. is a leading plastic recycling company based in Chilliwack, BC, specializing in HDPE, LDPE, LLDPE, and PP plastic recycling.

- **Our Mission:**

Reduce plastic waste and support a circular economy through sustainable, innovative recycling solutions.

# and Expansion Plans

## **Current Recycling Capacity:**

Approaching our target of **100 tons/month** in recycled plastics production, with a planned 50% increase in capacity over the next 2 years.

## **Focus on Recycling HDPE, LDPE, LLDPE, and PP.**

- **Expansion Plan:**

Increase capacity to meet growing demand, develop partnerships, and introduce closed-loop recycling solutions.



# with Metro Vancouver's Waste Goals

- **Metro Vancouver Waste Goals:**  
80% waste diversion target, current rate at 65% (Page 5, ISWRMP).
- **Eco Green's Contribution:**  
Recycling plastics is traditionally difficult to recycle and supports ICI and DLC waste sector targets.

# Metro Vancouver Waste Management Plan Alignment

## **Supporting Strategy 2.2 (Page 18, ISWRMP):**

Expanding recycling infrastructure to handle more plastic waste.

- Public Education (Strategy 1.3, Page 18):**

Eco Green plans to partner on public awareness campaigns for proper recycling practices.

# and Call to Action

## **Our Commitment:**

Eco Green Granule Enterprises Inc. is committed to helping Metro Vancouver reach its waste diversion and sustainability goals through innovation and collaboration.

## **. Next Steps:**

We look forward to working with Metro Vancouver to expand plastic recycling capacity and drive community awareness.

**Thank You for Your Time**

**Contact Info:**

**Email: [info@ecogreens.ca](mailto:info@ecogreens.ca)**

**Website: [www.ecogreens.ca](http://www.ecogreens.ca)**

**Eco Green Granule Enterprises Inc.**

**Visuals: Contact details, company logo.**