

# Markets First and Recycle Right

Presentation to CalRecycle, June 4, 2018

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# NRC Markets Development Workshops





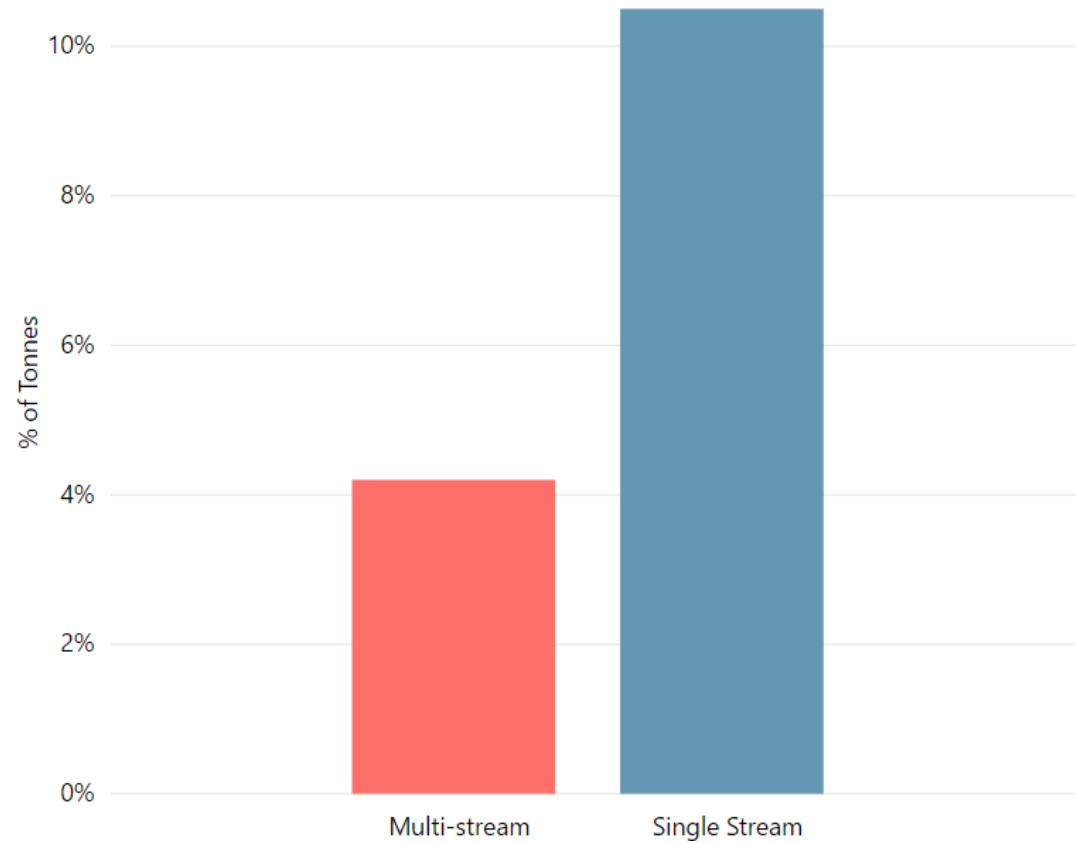
confusion + wishful recycling = contamination





# CURBSIDE CONTAMINATION RATE

CURBSIDE CONTAMINATION RATE



# Oregon DEQ Recs to Public

- ▶ **Continue to recycle whenever possible.**

Contact your local recycling facility or recycling collection service provider.

- ▶ **Recycle it right.** Put only clean items in your recycling containers. If in doubt, find out.

- ▶ **Prevent waste from the start.** Buy only what you need and minimize use of unnecessary and disposable packaging.

Source: Oregon DEQ, [Information on China's Import Restrictions](#)

# Addressing the Paper Challenge



- **Material that is clean, properly sorted, and contains only accepted material is now more important than ever to ensure we have viable end-markets for our material**
- **An integrated approach to reducing contamination (currently 6.5% system wide) is important and will include resident education, tagging, and leaving behind not-accepted materials**
  - Single-use plastic bags will be a top priority
  - Other problem materials include organics, textiles, wood, and electronics

# Addressing the Paper Challenge



- **Standards for quality of mixed paper being sent to China set to become more stringent with standard for prohibitive material potentially reduced to as low as .3% as early as mid-year**
- **We will continue to work with our partners to focus on further diversifying markets for our materials**



# Domestic Processing of Mixed Plastics: Stakeholder Meeting Summary

January 30, 2018

Lisa Sepanski, King County Solid Waste Division



Seattle  
Public  
Utilities



King County **Linkup**



# Findings: Domestic Processing Capacity Exists

**There is current domestic processing capacity for mixed plastics load at Merlin in Vancouver BC.**

- Cost to transport to Merlin facility from Seattle
- Cost to sort
- Revenue for materials – depending on contents of bales
  - HDPE Natural and Color
  - PP color
  - PET Clear
  - PET green
  - Polycoated fiber

# Findings: Interest in Building a Secondary MRF in PNW

## **Secondary MRF shifts from scrap commodity service to sorting service business model**

- Primary MRFs in WA and OR send low volume materials and yield losses to Secondary MRF
  - Aggregates materials from MRFs to achieve critical mass
  - Sort materials into direct-to-mill commodities in truckload quantities
- Aggregated volumes justify investments in automated sorting technologies
- Opens additional domestic markets for materials such as PP, PS/EPS, and PLA

# Findings: Interest in Building a Secondary MRF in PNW

- Improves Blue Bin Accountability
  - No need to export mixed loads of materials
  - Commodities sold direct-to-mill are documented
- Requires infrastructure investments in only one facility within a region
  - Allows the facility to quickly adapt to changes in packaging materials
- Manufacturer accountability
  - Manufacturers or brand owners are identified and contacted to see if they want to pay to have their packaging materials recycled

# Next Steps: Secondary MRF

- Develop detailed costs and funding scenarios
  - Explore manufacturer funding
- Secure funding and commitment for material volumes
  - Co-op Model
  - General Partner(s) - provide capital investments
  - Limited Partner - primary MRFs provide unsorted materials and pay processing fee. In return receive portion of revenue from sale of materials.
- Facility could be operational within 9 – 12 months of securing material flow, funding and permits



# Findings: Demand is Key

## **Step up the demand for recycled products and use recyclable materials in products and packaging.**

- Recycling isn't recycling until recyclable materials are used to replace virgin feedstocks.
- Local and state governments must require the use of recycled content in products and packaging.
- Manufacturers must use recycled feedstocks in their products and packaging.

# Next Steps: Create Demand

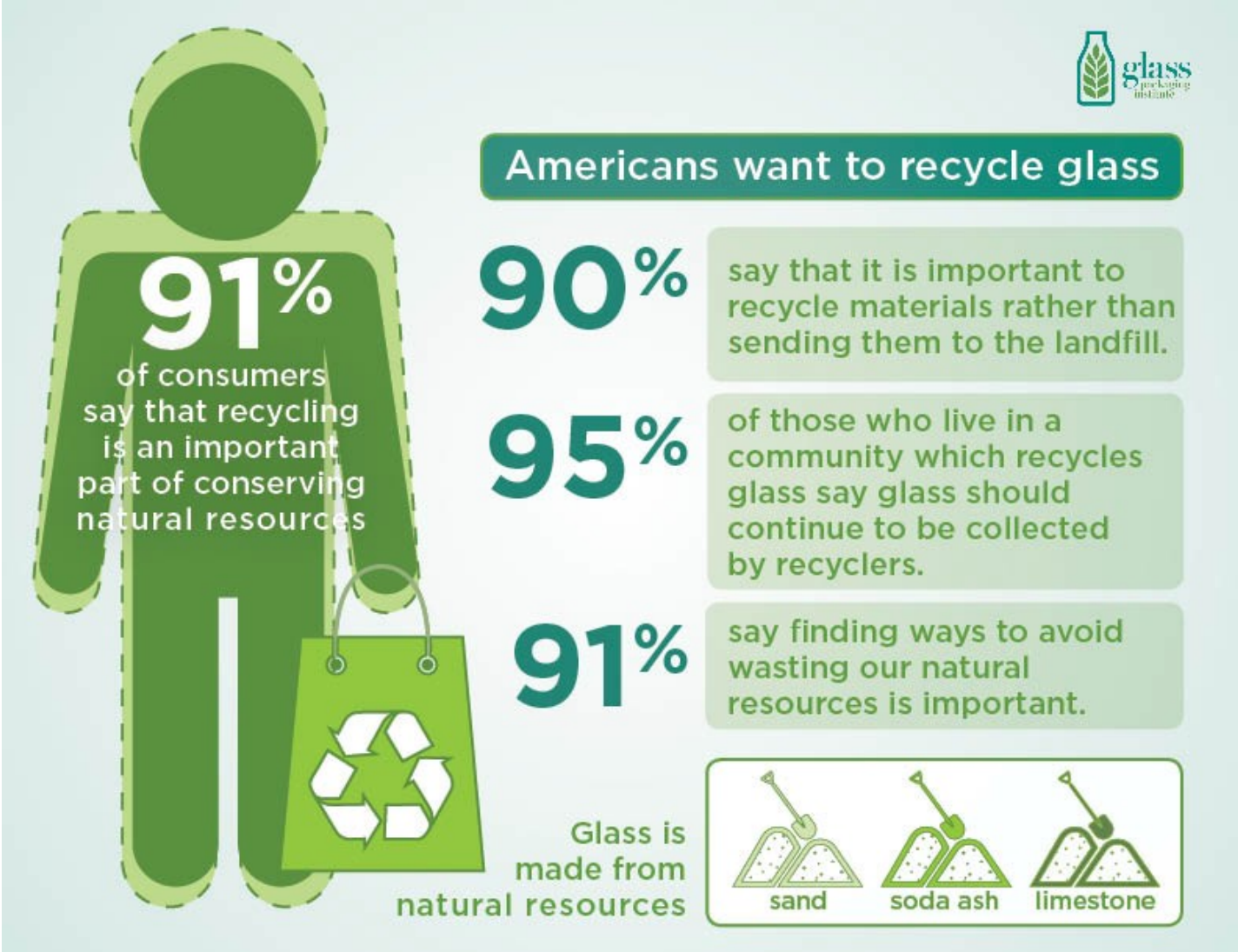
- Draft state legislation
  - Require manufacturers to use recycled feedstocks in their products and packaging
  - Coordinate with other states - California SB 168 requires recycled content in all beverage containers sold in the state
  - 2018 HB 2914 – work on new bill for 2019
- Develop local procurement ordinances
  - Require the use of recycled content in products and packaging
- Support national efforts - APR's Recycling Demand Champions
  - WM, Republic, Recology, Waste Connections, Amazon, Costco, etc.

Report Available at  
King County LinkUp Webpage

<https://www.kingcounty.gov/depts/dnrp/solid-waste/programs/linkup/documents.aspx>



# Consumers Want to Recycle Glass Containers



\*Source: Glass Packaging Institute 2016 Survey USA poll, GlassRecycles.org



# MYTHS / REALITIES FROM THESE & OTHER STUDIES FOR RESIDENTIAL RECYCLING

**Myth- Glass Cannot Be Captured Effectively or Costs Too Much to Capture at a MRF**

**Reality- Small or large investments yield big improvements**

- Many MRFs capture well over 90% of the glass generated in the curbside program (Rumpke, Resource Management)
- Small investments with good ROIs possible- Glass Recycling Coalition website has best practices



*CP Glass Cleaning System*

# MYTHS / REALITIES FROM THESE & OTHER STUDIES FOR RESIDENTIAL RECYCLING

**Myth- Glass greatly contaminates paper**

**Reality- Glass is only a small part of the contamination of paper and can be cleaned effectively**

- Only 5-6% of all paper contamination comes from glass when measured - this is a consistent number
- **Food and garbage are by far the bigger issue**
- No export issues with glass reported by major shippers (downgrades or rejections)



# Refillable bottles: A unique opportunity

- Opportunity for beverage industry leadership
  - An “Oregon” story about industry stewardship
- Market and timing are right
  - Consumers value craft and sustainable
  - 500mL and 12oz bottles are replacing 22oz
- OBRC uniquely positioned to implement
  - Nearly all empty beer bottles already pass through our facilities already



# Can we change our lens and focus?

life cycle environmental burdens?



bio-based materials?

contains recycled content?

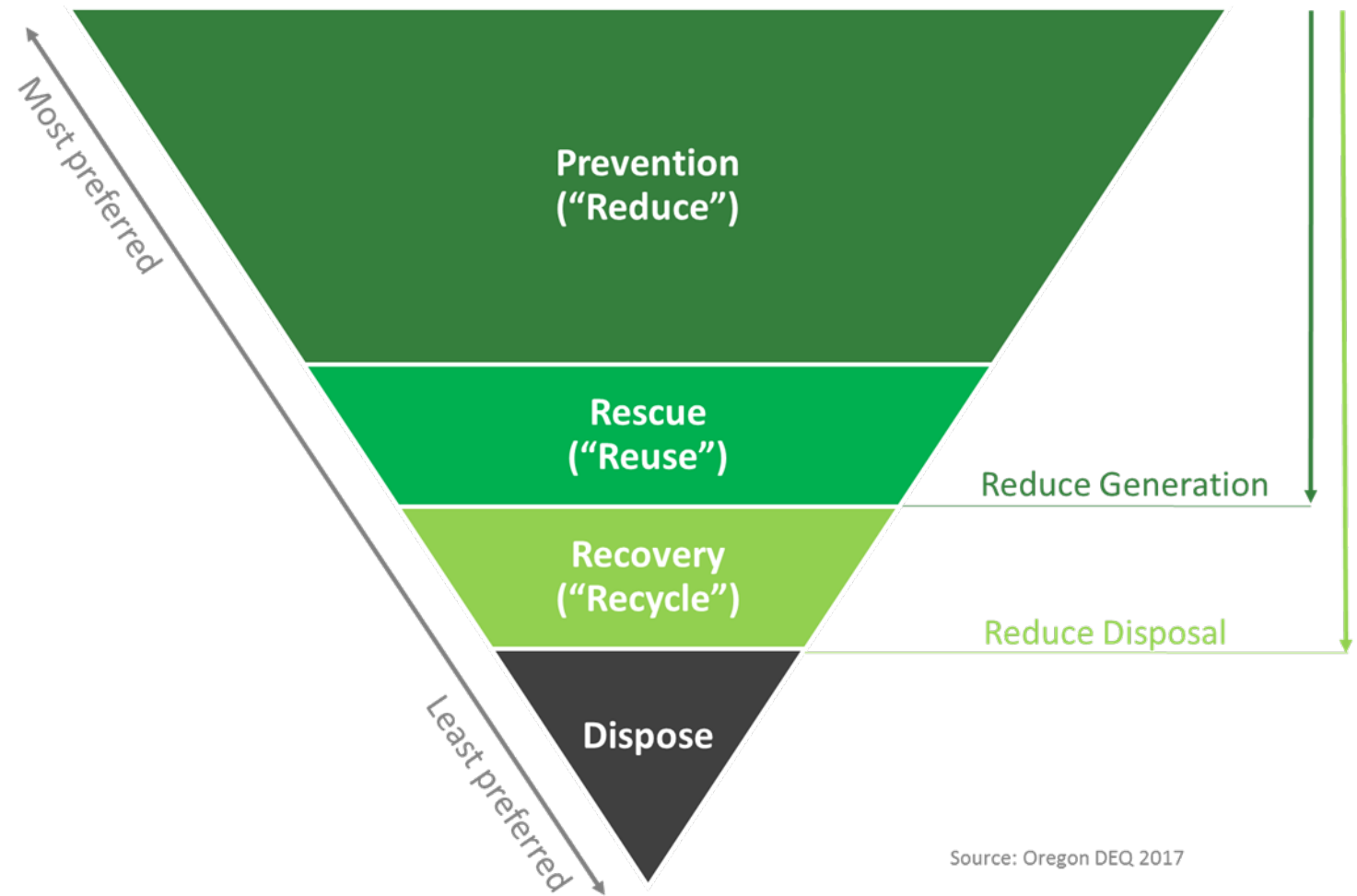
recyclable?

reusable?

compostable?



# Focus on Materials Management



Source: Oregon DEQ 2017

# Focus on Materials Management

- ▶ Design intelligently
- ▶ Collect materials selectively
- ▶ Communicate clearly
- ▶ Share materials responsibility with upstream actors

# Circular Economy Principles

1

## THOUGHTFUL DESIGN

- REFILLABLES
- RIGHT-WEIGHTING

2

## KEEP PRODUCTS AND MATERIALS IN USE

- REFILLABLES
- INFINITELY RECYCLABLE

3

## REGENERATE NATURAL SYSTEMS

- WATER AND ENERGY
- RESPONSIBLE OPERATIONS

Source: Jim Nordmeyer, VP, Global Sustainability, O-I,



We Invest in Businesses and Technologies that Optimize Product Supply Chains and Build the Circular Economy



### PROJECT FINANCE

### GROWTH EQUITY

### RESEARCH & DEVELOPMENT



Invest in large scale recycling and circular economy infrastructure with below market rate term loans

#### Investors Include



Invest in growth of leading companies with equity that can catalyze circular supply chain solutions in apparel, food, electronics, and materials.

Identify and incubate

#### Investors Include

Family offices, institutions, individuals interested in strong financial returns and measurable social impact.



Identify and incubate early stage solutions with no-return grants, builds the investment field through funded research.

#### Partners Include



# Institutional capital is waiting on the sidelines

- ▶ \$10 billion/year in investment capital is currently supporting linear models
- ▶ Private capital lacks sightlines across the system
- ▶ Supply side controlled by few players
- ▶ Volatility in commodities markets
- ▶ Lack of offtake agreements
- ▶ Innovative, but unproven, technologies



■ **More catalytic capital** is needed to unlock mainstream investment in end-market development

**Catalytic capital would:**

- ✓ De-risk
  - ✓ Prove business models
  - ✓ Stimulate investment
- 

**Other supports needed:**

- + Subsidized R&D
- + Long-term offtake agreements, price floors
- + Loan guarantees
- + Green procurement & code

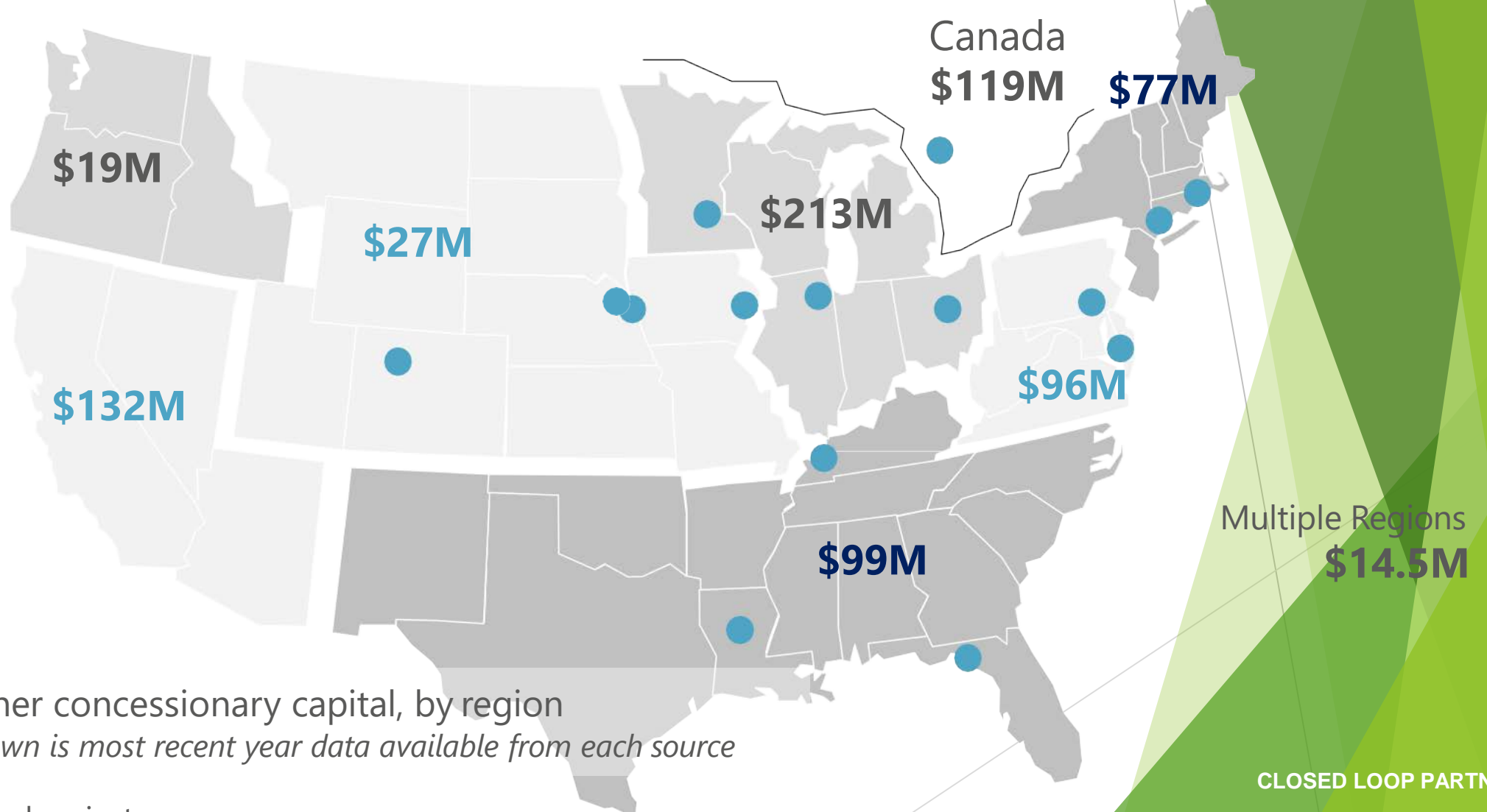


**GREENMANTRA**<sup>™</sup>  
TECHNOLOGIES



# Capital Landscape: \$800 Million/yr

In public & private concessionary capital is available



\$ Grants and other concessionary capital, by region  
*Total amount shown is most recent year data available from each source*

● Closed Loop Fund project



Recycling Markets Development in the 21<sup>st</sup> Century  
Jan Rayman, CEO, The ReWall Company



# “ReWallution”



- High performance packaging upcycled into high performance building materials – durable, inherently moisture and mold resistant
- Turn locally collected waste into locally distributed building materials





# Healthy Building Materials

## Exterior Applications:

- Structural Sheathing
- Stucco Substrate
- Utility Boards



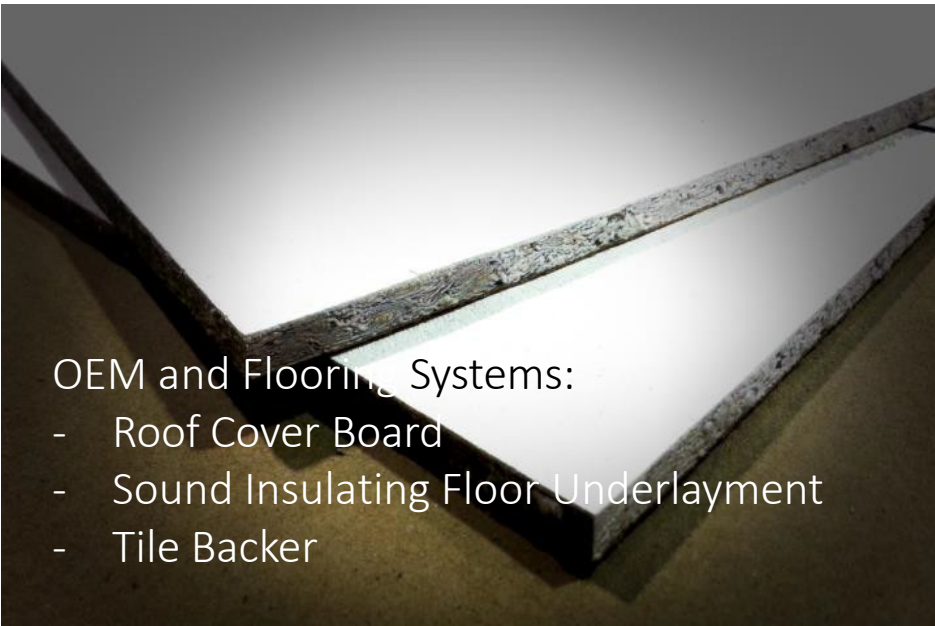
## Interior Applications:

- Pre-finished Wallboard
- Moisture & Mold Resistant Wallboard
- Ceiling Tiles



## OEM and Flooring Systems:

- Roof Cover Board
- Sound Insulating Floor Underlayment
- Tile Backer



## All ReWall Products Deliver:

- ✓ Superior Performance
- ✓ Unparalleled Eco-friendliness
- ✓ LOWER PRICE  
(No Green Premium)





# Now Proven at Flagship Projects

Tesla® Gigafactory One, Sparks NV



VA Medical Center, Omaha, NE



Iowa State University Campus, Ames, IA



Microsoft® Las Colinas 2, Irving TX



YMCA Southwest Omaha, NE



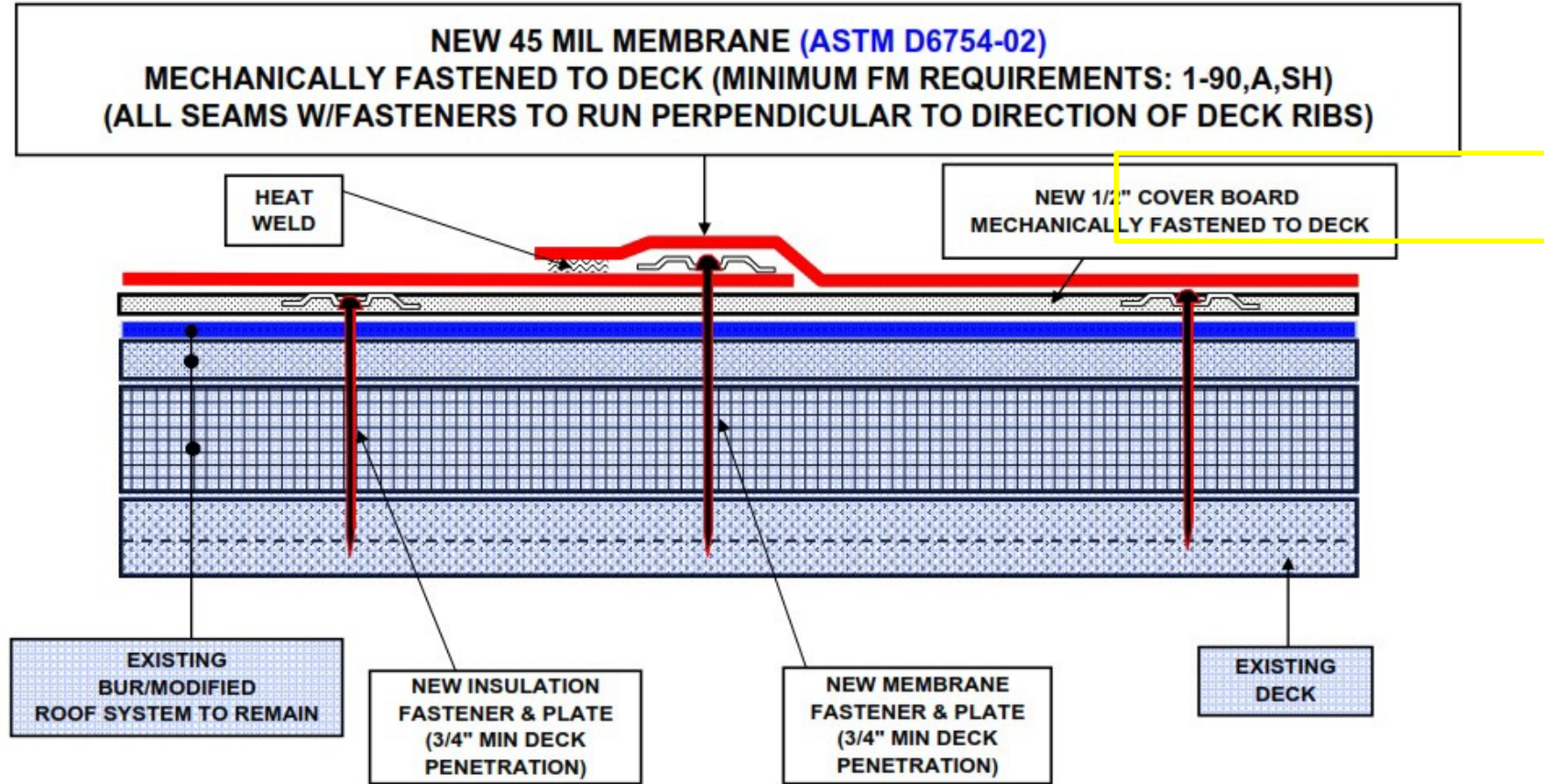
Highland High School, Highland, IL







# Easy Swap - Big Impact



Each 100,000 sf roof project recycles 100 tons of cartons (better performance, better price, made from their waste)



# Power of Partnerships

- ✓ Develop collection infrastructure
- ✓ Accelerate new product acceptance (close the loop)
- ✓ Public education
- ✓ Promote Design for Recyclability/Compostability

