

# The Sustainable Materials Management Webinar Series

## **Cartons: Recycling's Newest Success Story, *Building Access Nationwide for Carton Recycling***

Tuesday December 16, 2014/1:30 – 2:45PM ET

Presenter: Jason Pelz, Vice President of Environment  
for Tetra Pak Inc.





# Cartons: Recycling's Newest Success Story

*Building Access Nationwide for Carton Recycling*

*PARMC Webinar Series  
December 2014*



Carton Council

[CartonOpportunities.org](http://CartonOpportunities.org)

# Overview



## Background and History

Cartons and Carton Council history

Why recycle cartons

Carton Council strategy

## Markets for Carton Commodity

Building markets for cartons

Opportunities for positively sorted cartons

Brokering cartons to market

## Supply Chain for Recovered Cartons

Building supply at MRFs

Generating consumer awareness

## Success to date and next steps

Current access status

Next steps

# What are cartons?



**CARTONS ARE**  
**LIGHTWEIGHT,**  
**SUSTAINABLE**  
packages for  
**REFRIGERATED**  
and **SHELF STABLE**  
food and beverage  
products.





# Who is the Carton Council?



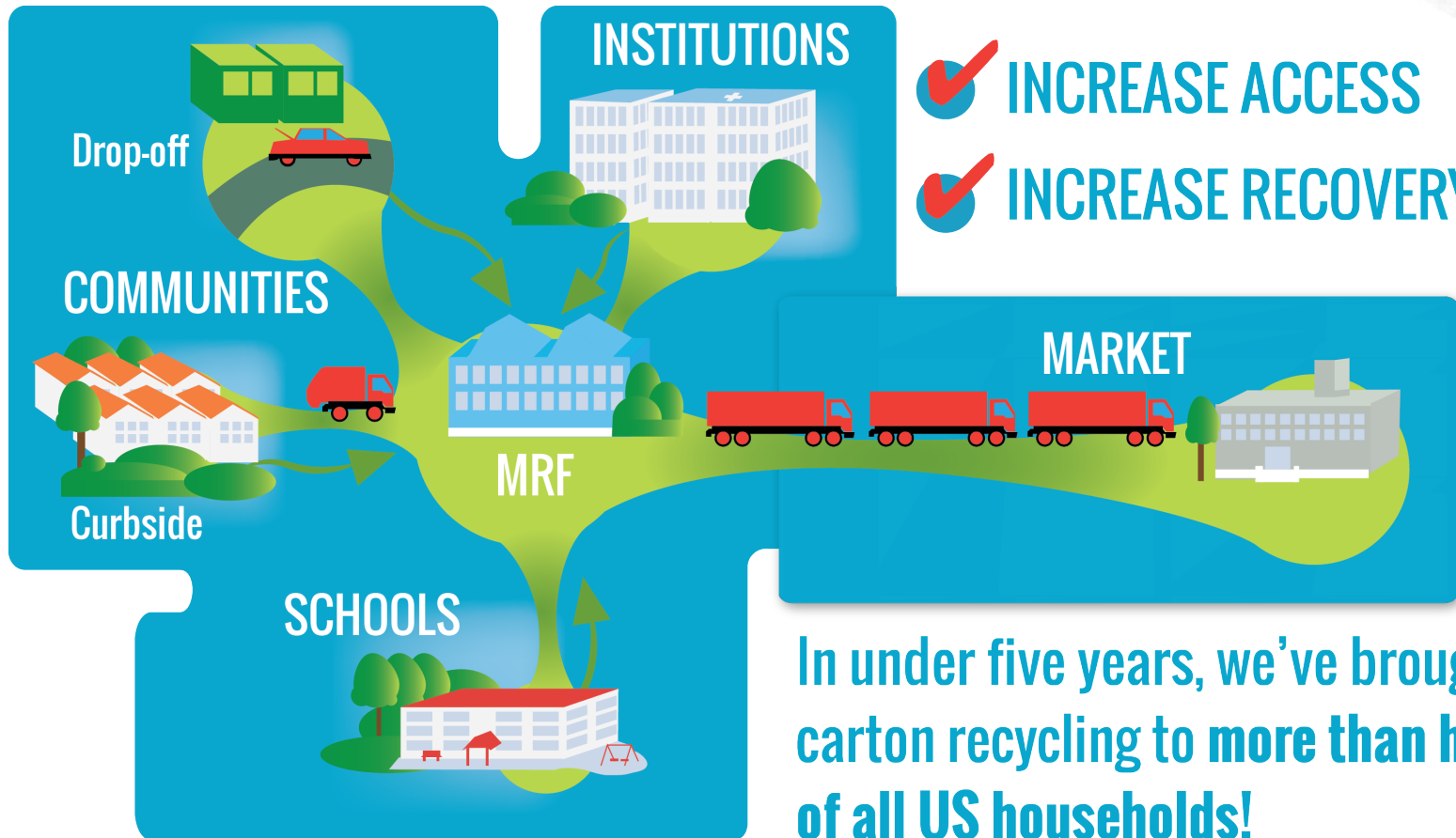
Carton Council

A group of carton manufacturers united to deliver long term, collaborative solutions to divert valuable cartons from the landfill.



Associate Member  
**Weyerhaeuser**

# Our Goals & Outcomes



**In under five years, we've brought carton recycling to more than half of all US households!**

# More access = more visibility



- The on-pack logo makes carton recycling more visible to consumers because the package informs consumers of what to do.
- Brands that use carton packaging are now able to include a qualified logo\* on their packaging.



\* Currently with a negative qualifying statement in compliance with Federal Trade Commission guidelines. As cartons reached a significant majority of households with carton recycling access, the packaging may reflect only the recycle symbol.

# Visibility = More Recovery



More access brings a better recycling message on cartons

| Pre 2010   | 2010 - present<br>Between 30-60% access   | Coming Soon<br>Over 60% access  |
|------------|---|---|
| No Message | <b>RECYCLABLE</b><br><br><b>ONLY WHERE FACILITIES EXIST</b><br>Visit <a href="http://recyclecartons.com">recyclecartons.com</a> to<br>see if recyclable in your area | <b>RECYCLABLE</b><br> |

Many cartons already display recyclable messaging – but we want more!

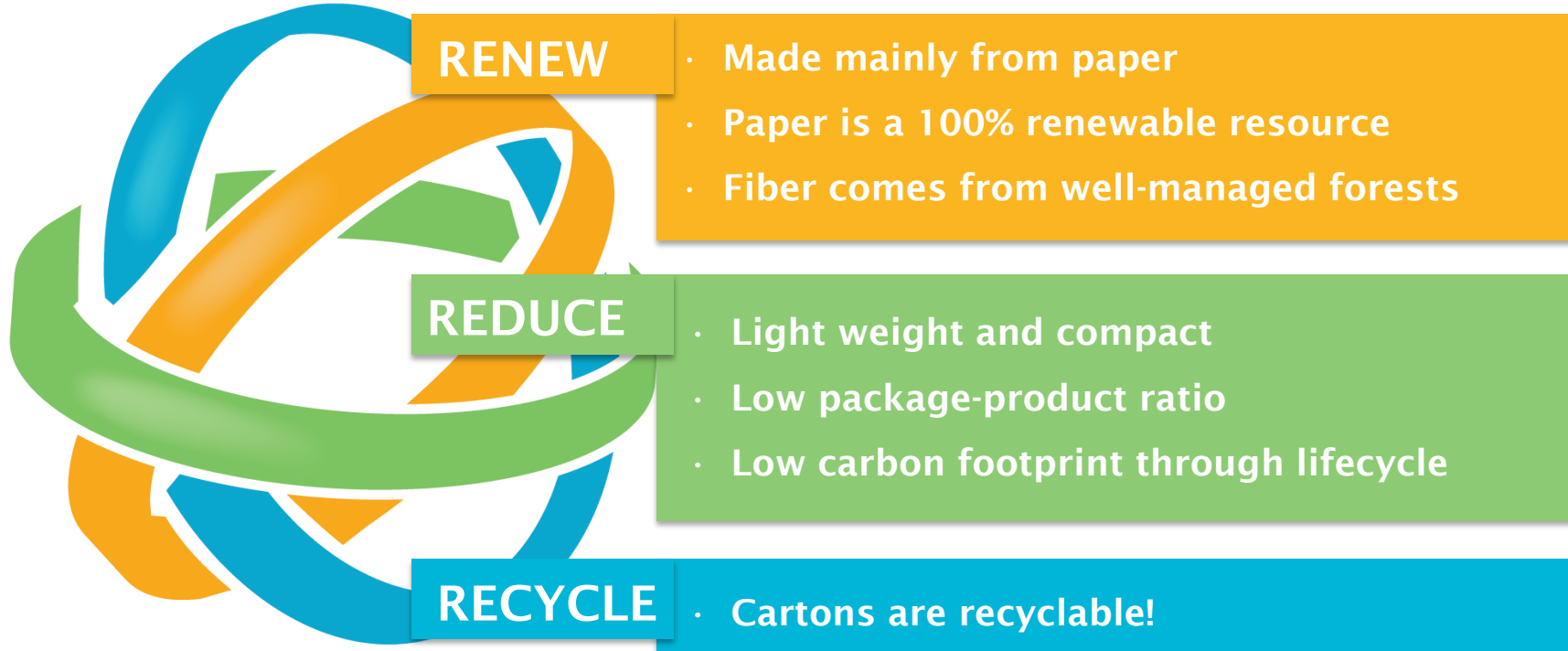
# Why Cartons? Why Recycling?



# Cartons are sustainable



Cartons are one of the *most sustainable* options for food and beverage packaging.



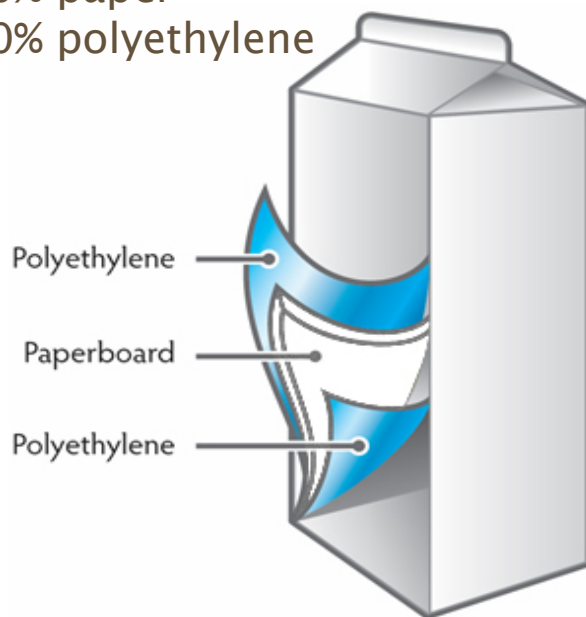
# Cartons contain valuable materials



Made with 100% virgin fibers, cartons contain some of the best fiber still in the waste stream.

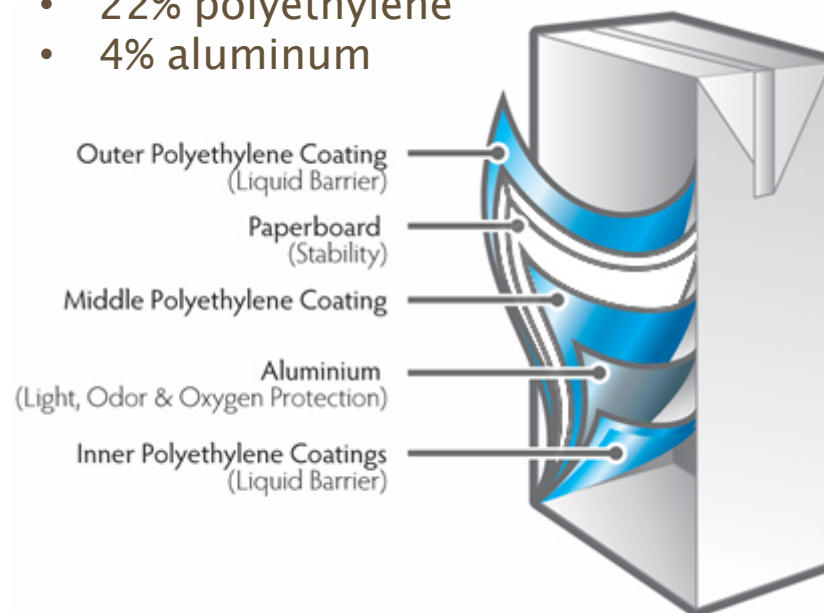
## *Refrigerated “gable top” cartons*

- 80% paper
- 20% polyethylene



## *Shelf-stable “aseptic” cartons*

- 74% paper,
- 22% polyethylene
- 4% aluminum

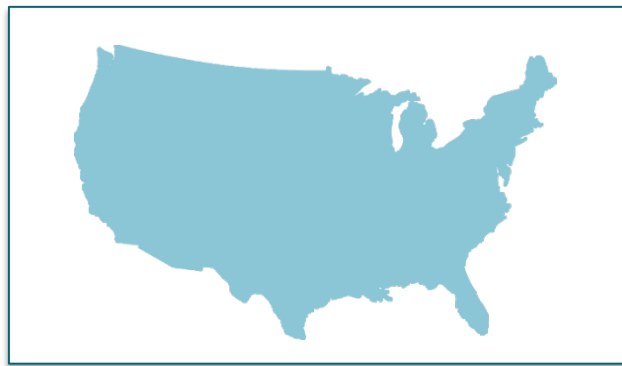


**Cartons are Not Wax Coated**

# Cartons are recyclable



Carton Recycling is Standard Practice Globally



*Over 140 mills taking cartons worldwide*



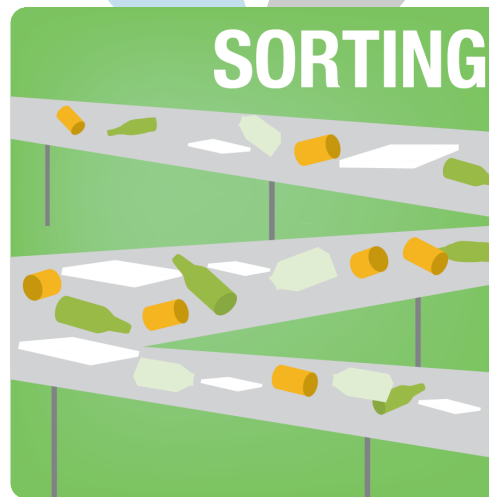
- Cartons recycled in US for more than 2 decades
- Carton recycling is already available to more than half of US residents.

# How Carton Council Achieves its Goals

# Target the Recycling Supply Chain



*Our goal: Build carton recovery*



**MATERIAL**

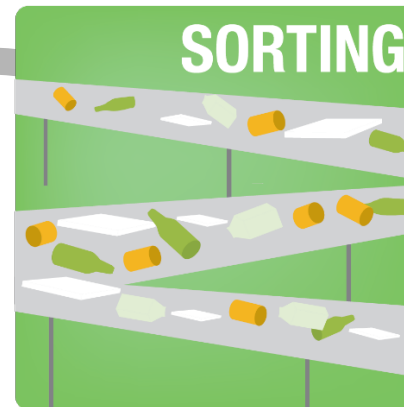
**STRATEGY**



# Work Backwards from End Markets



*Build sustainable markets -  
“Build the Demand”*



*Develop awareness and participation  
“Fill the Pipeline”*



*Create sustainable infrastructure -  
“Build the Pipeline”*

# Building Sustainable Markets

*Building the Demand*



# Where to Start?



- Cartons are small volume, but valuable
  - .5% to 2% of incoming loads in successful programs
  - EPA estimates 500,000 tons of cartons per year in municipal waste stream.
- In 2008, only 1 active mill in North America handling cartons
- All components of cartons have potential value
  - poly and ply/al residual can be recycled into other products.

# Looking at Markets



Containerboard



Newsprint



Tissue



Printing & Writing

# Building End Market Demand



- From 1 active mill in NA in 2008 to many that are now buying cartons, with more demand in pipeline





# Pacific Rim End Markets



- Shin Chang & Paper Industry Co. Ltd, Chungchongnam
- Daewang Paper Co Ltd, Gunpo-si
- Samjung Pulp Ind. Co Ltd., Godeokmyeon
- Daewon Paper Co, Pochun

- Fiber Pattina, Thailand

# What is it that's moving?



SIMS Facility Brooklyn, NY August 2014

# Grade #52



## Grade #52 officially recognized by recycling industry in April 2011

### New PSI\* Spec Grade #52 - Definition

Consists of liquid packing board containers including empty, used PE coated, printed one-side aseptic and gable-top cartons containing no less than 70% bleached chemical fiber and may contain up to 6% aluminum foil and 24% PE film.

Prohibitive materials may not exceed 2%




Total out-throws may not exceed 5%

*\*PSI = The Paper Stock Industries (PSI) Chapter is a national chapter of the Institute of Scrap Recycling Industries, Inc. (ISRI). It is dedicated to the recovered paper industry*



# Opportunities for Grade #52

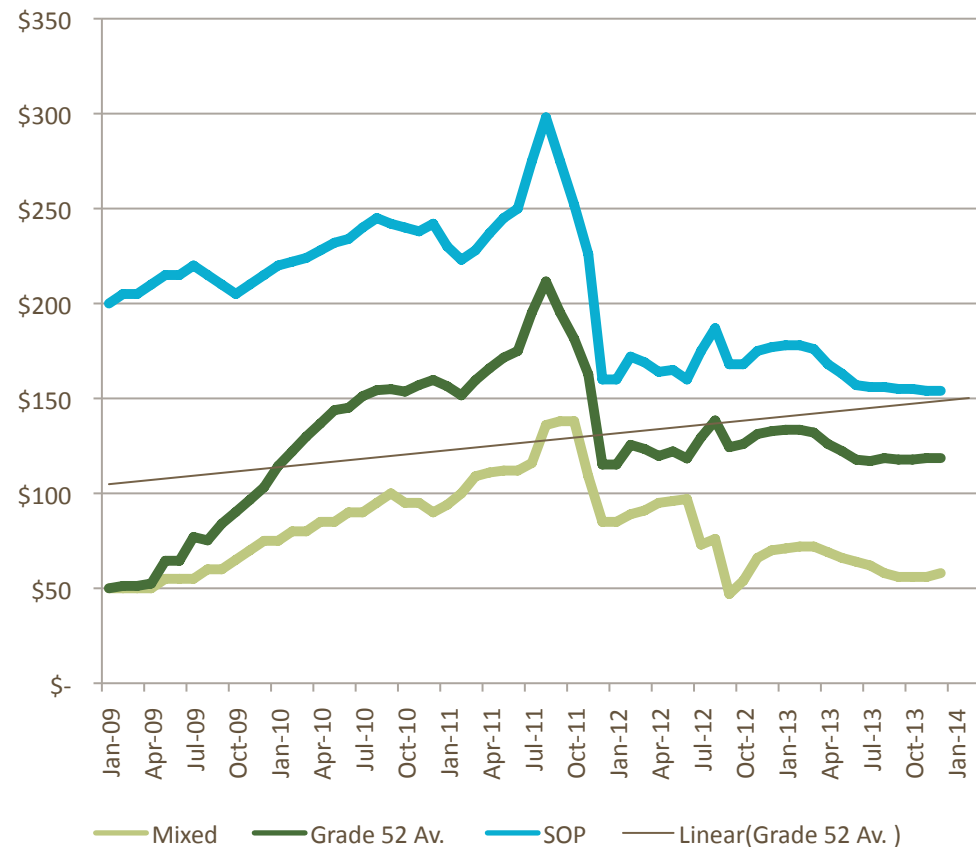


| Product   | Pacific Rim Mills   | North American Mills  | Source Material  |
|---|---|---|--|
| <p>Tissue and toweling products</p>    | <ul style="list-style-type: none"> <li>Shin Chang &amp; Paper Industry Co. Ltd, (S. Korea)</li> <li>Daewang Paper (S. Korea)</li> <li>Samjung Pulp (S. Korea)</li> <li>Daewon Paper (S. Korea)</li> </ul> | <ul style="list-style-type: none"> <li>Great Lakes Tissue (MI)</li> <li>Kimberly-Clark (MX)</li> </ul>        | <ul style="list-style-type: none"> <li>Post-Consumer Cartons</li> <li>Factory (Pre-Consumer) Waste</li> <li>Filling Machine Waste</li> <li>ONP, OMG, white ledger, other grades</li> </ul> |
| <p>De-inked pulp</p>    | <ul style="list-style-type: none"> <li>Fiber Pattana (Thailand)</li> </ul>  | <ul style="list-style-type: none"> <li>FibreK (WV)</li> <li>Fox River Fiber (WI)</li> <li>GET (MX)</li> </ul> | <ul style="list-style-type: none"> <li>Post-Consumer Cartons</li> <li>Factory (Pre-Consumer) Waste</li> <li>Filling Machine Waste</li> <li>ONP, OMG, white ledger, other grades</li> </ul> |
| <p>Building products (wallboard, sheathing, ceiling tiles, roofing sheet)</p>  | <ul style="list-style-type: none"> <li>Fiber Pattana (Thailand)</li> </ul>  | <ul style="list-style-type: none"> <li>ReWall (IA)</li> </ul>   | <ul style="list-style-type: none"> <li>Post-Consumer Cartons</li> <li>Factory (Pre-Consumer) Waste</li> <li>Filling Machine Waste</li> </ul>   |

# Pricing for Grade #52



- Carton pricing generally follows Sorted Office Paper (SOP) pricing—*varies by location of source, fiber mix, etc.*
- Export pricing varies based on shipping container weights and locations—*strong export demand—over 140 mills consuming cartons worldwide*

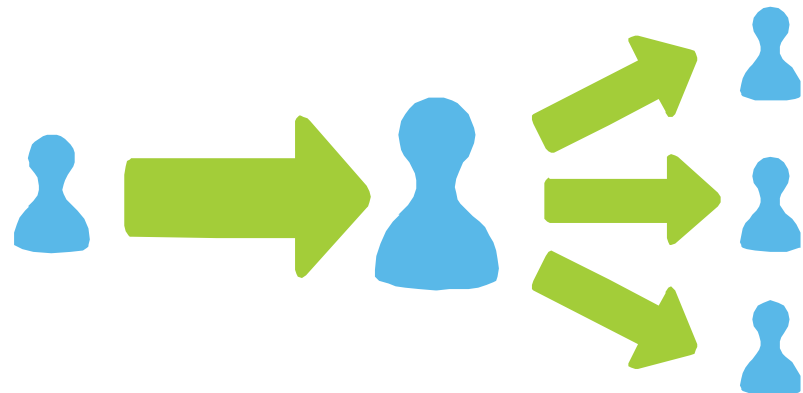




# How Cartons Move



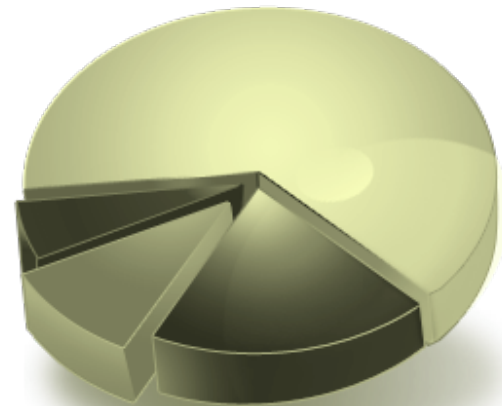
- Carton Council is not a broker of materials
- Carton Council is a match maker
- Broker network and mills
  - Working with broker network works better in most cases
  - However it is possible to work directly with mills.



# Key Measure of Carton Recovery Success



- Yield
- Defined as % of incoming tons of post-consumer cartons that are recovered and manufactured into new product
  
- Carton Bale
  - Average of 75% fiber – very high quality , long virgin fiber, free of ink.
  - Mills able to recover up to 100% of fiber
  - Poly/Al fraction recovered by some mills



# Markets Hierarchy



Requires positive  
sorting of cartons  
into Grade #52

Requires cartons to  
be accepted in  
recycling programs

## Preferred for highest yield

- 1) Whole carton recycling into building products
- 2) Positive sort of carton into tissue/pulp with poly/al recovery

**99 to 100%  
carton recovery**

## Preferred for high yield

Positive sort of carton into  
tissue/pulp - Some poly/al  
used for energy

**90% fiber recovery  
70% total recovery**

## Acceptable (least preferred)

Mixed paper into domestic  
or export markets  
(various grades)

**50–60% total** (depends on  
pulping time and temperature)

## Unacceptable

Disposal

# Examples of End Products



## Fiber



## Whole Carton products



## Poly products





# View from a Mill



- Fox River Fiber in Wisconsin – Pulping Process



# View from a Mill



- The pulp is sheeted, baled and shipped to their customers.





# Building the Pipeline

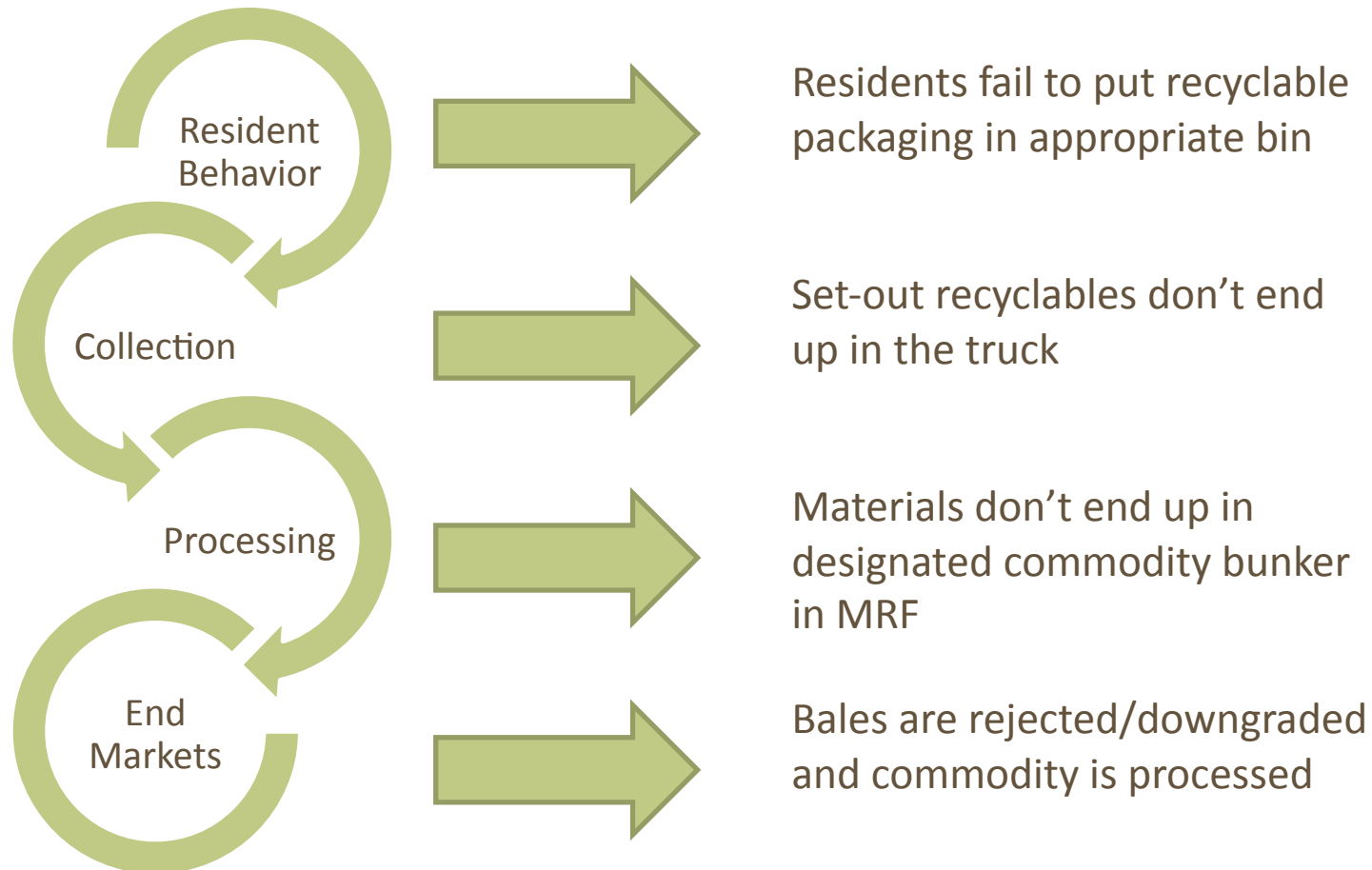
*Creating Sustainable Infrastructure*



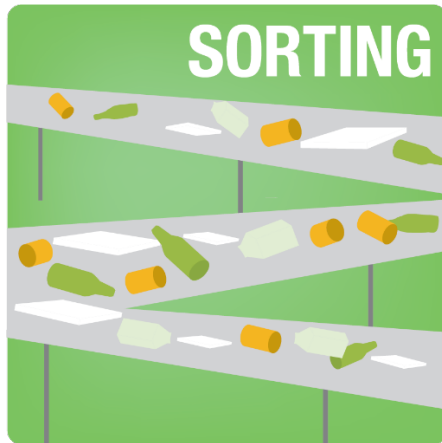
Acres Camp Update – 6/30/14

[CartonOpportunities.org](http://CartonOpportunities.org)

# Impacts on Volume

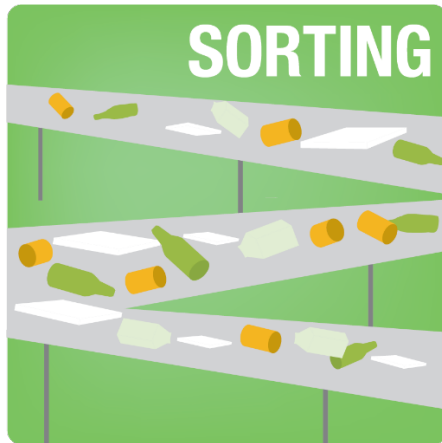


# Create Sustainable Infrastructure



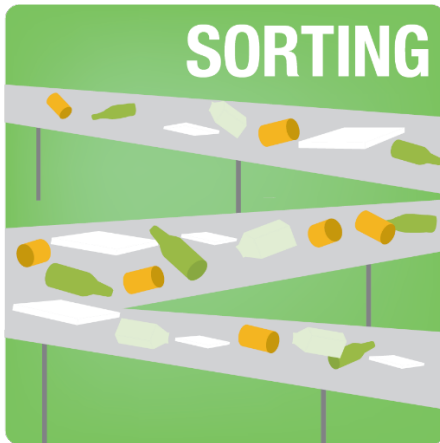
- Work with Facilities to
  - Agree to take cartons
  - Agree to report data to Carton Council
    - Household access and tonnages
- Positive Sort of Cartons at Facilities
  - Capital equipment grants available, based on campaign's criteria

# Create Sustainable Infrastructure



- Range of Solutions for MRFs
  - Manual sort with bunkers
  - Vacuum-assisted manual sort
  - Optical sorting
- Matching Right Solution to each MRF
  - Carton Council best practices drawn from experience with MRFs of all sizes
  - Working closely with equipment suppliers and MRF engineers
  - Connecting MRF to carton markets
  - Matching equipment grant to access gains

# Create Sustainable Infrastructure



- Optional Assistance Offered
  - Matchmaking with broker networks
    - To include movement of bales/partial loads.
  - Free promotional materials
  - Support for customer outreach

# Filling the Pipeline

*Develop Awareness and Participation*





# Develop Consumer Awareness and Participation



- Notify users of facility that now accepts cartons
  - Collectors
  - Communities
  - Residents
- Outcomes
  - Increased visibility of carton recycling
  - Drive carton volumes to facilities

# Develop Consumer Awareness and Participation



Carton Council offers series of tools to assist with promotion and education around carton recycling

- Tool-kit with template advertisements, etc.
- Mini-grants to assist with costs, case by case basis
- Large major metropolitan area awareness campaigns



# Develop Consumer Awareness and Participation



- If you can recycle cartons at home, you can recycle cartons at school.
- Carton Council resources for school carton recycling programs:
  - Grants for program start-up
  - Grants for special recycle bins
  - Start-up Guide, Best Practices
  - Posters and other materials

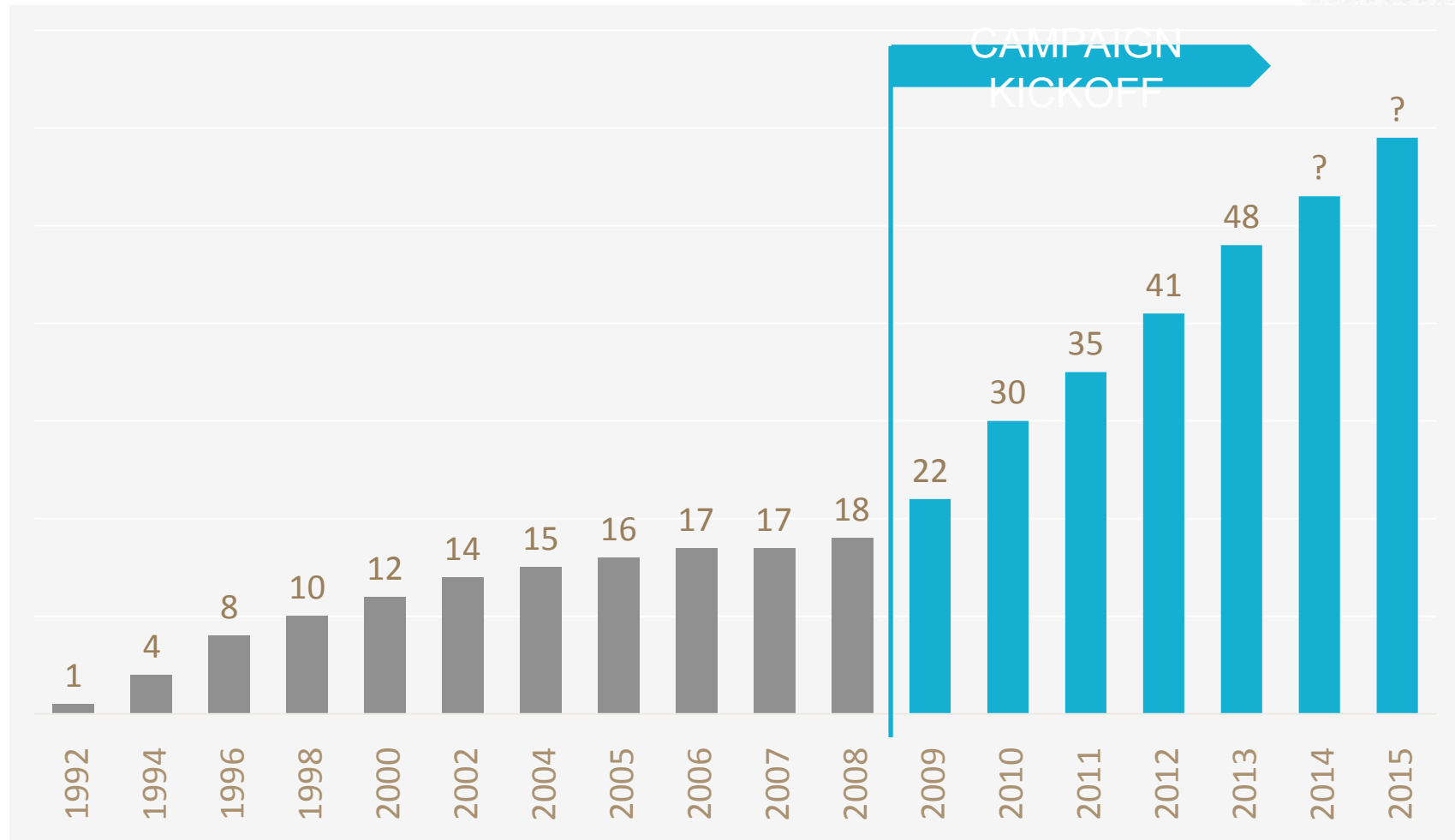


# Successes to Date

*As of November 2014*



# Steady Progress since 2008



# 280 % Increase in Carton Recycling Access



## ■ 2008-Before Campaign:

- Carton recycling programs in 24 states
- 18% of U.S. households had access to carton recycling

## ■ Today:

- Carton recycling programs in 48 states
- 52% of U.S. households have access to carton recycling



# Cartons now recycled across the US



77 of the 100 largest U.S. cities have access to carton recycling.

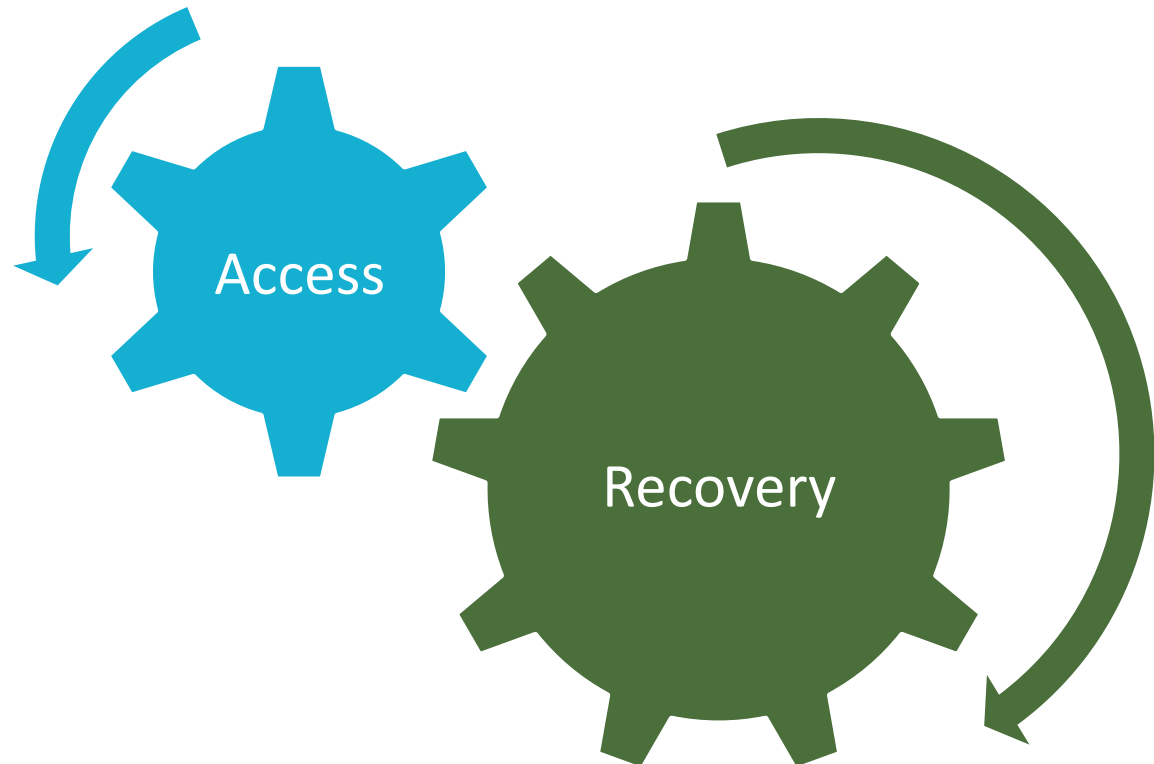
61.5 million U.S. households can now recycle cartons in their communities.

Every month, more carton recycling programs are being added in schools, cities, towns, and counties across the country.

# Campaign Performance - Access and Recovery



- Access campaign now over 50% - on track with goals from 2008 campaign kickoff
- Recovery is 2<sup>nd</sup> piece of the puzzle.



# Summary



- Carton recycling is real, its happening!
- Cartons are valuable, in demand
- Markets exist
- Need to fill the pipeline with more cartons – add cartons to your program today!
- More access = more visibility of carton recycling.

*Stay in touch....*

Have a question, call the Carton Council  
at **1-855-7-CARTON**

visit **RecycleCartons.com**  
**CartonOpportunities.org**



Recycle Cartons



Recycle Cartons



TOOLS . RESOURCES . GRAPHICS

FACTS . WHITE PAPERS . SUPPORT



CartonOpportunities.org



# QUESTIONS?

PLEASE USE THE GO TO WEBINAR DIALOGUE BOX

