Trex Company
CT Solid Waste Advisory Committee
June 28, 2016
Overview

• Who We Are and What We Do
• Raw Materials Trex Consumes
• FFRG & WRAP Initiatives & Case Studies
• True Commitment to Consuming Recycled Raw Materials
  – Must either Change your Product, or
  – Change your Process
About Trex Company, Inc.

• Leading Brand of Composite Lumber in North America – invented category
• A former division of Mobil Corporation, the company was formed by four Mobil executives in 1996 and went public in 1999
• Trex Company’s Headquarters, R&D and Manufacturing Facilities are located in Winchester, VA
• A Second plant opened in Fernley, NV in 1999
Trex Recycling Facts

• In the past 10 years, Trex has recycled over 2.5 Billion pounds of polyethylene film
• 10,000+ collection points across North America
• Trex collects over 3 Billion recycled bags, films & wraps to support our manufacturing each year
  – Equivalent of over 50 Million #s of PC Film
• Trex is the largest domestic recycler of Post Consumer Film
• There are about 140,000 recycled bags, films and wraps in a 500 sq. ft. Trex Deck
What is Trex?

– Does not Crack, Split, Splinter or Rot
– 25-year Residential Warranty
  • 10-year Commercial
– Resistant to Moisture, Insects and Sunlight
– Slip Resistant- More so Wet than Dry
– Never Needs Staining- Only Requires Cleaning
– Works like Wood- use same Tools and Techniques
– No Toxic Chemicals or Preservatives
– Environmentally Friendly- Made of 95% Recycled and Reclaimed Materials
Product Offering

Transcend®
Pergola
Lighting
Elevations®
Railing
Wood Flour
Stretch Film
Plastic Bags
Acceptable Household Film

ALL ITEMS MUST BE CLEAN AND DRY

• Grocery Bags
• Stretch Film / Shrink Wrap
• Newspaper Sleeves
• Paper Towel / Toilet Paper Overwrap
• Produce Bags
• Dry Cleaning Bags
• Case Wrap (used to wrap soda bottles, canned goods, water bottles, etc.)
• Ziploc Bags
• Bread Bags (without clip)
• Ice Bags (DRY - without metal clips)
• Mattress Bags
• Shipping Pillows, deflated
• Polyethylene Foam (used in wrapping furniture)
• PE Packaging (2 and 4)
Oxo Biodegradable and / or Compostable Bags / Films

• Threaten the future of this currently viable recycling stream
• By definition, these items are not recyclable
• We have a 25 year warranty on our products

• These items CAN NOT be included in film recycling programs
Member of FFRG (ACC)

• Primary Goal – Double recycling rate in 5 years
  – Nationally, more than 1 billion #s of bags and wraps were recycled in 2011
    • Up 55% from 2005
  – Nearly 1.2 B #s of bags & wraps in 2014
    *Source: Moore Recycling Associates, Sonoma, CA

• How?
  – Communicate
  – Collect
  – Consolidate
Case Study # 1
Vancouver, WA

- Population 450,000
- Goal: reduce film at MRF
  - Film 4% of contamination with carts
- “Recycling Done Right Campaign” Promotion
  - Mailers
  - Cart tags
  - Bins w/ signage
  - Bag stuffers
  - “L” signs on check stand monitors
Vancouver’s Results

- 125% increase in material returned from stores
- No increased contamination
- Reduction of bags at MRF by 75%

- Data provided by Moore Recycling Associates
Case Study # 2
Milwaukie, Wisconsin

• Wisconsin identified film & bag recycling as statewide goal 2015

• Campaign goal:
  – Test tactics in increasing consumer awareness
  – Improve film recycling opportunities in Milwaukie

• Used 10 Roundy’s stores
  – With single main entrances
  – Hadn’t conducted significant outreach before

• Bins, signage
Milwaukie’s Results

• 25% increase in film collected
• Minimal increase in contamination
• 41% increase in consumer awareness
  – Positive measurable impact on customer knowledge about film recyclablility
  – Respondents communicated that program gives them a positive impression of the store
    • 36% will select a store because they offer film recycling
Case Study # 3
Regional Grocer in NY

• Training
• Bins in store fronts w/ posters
• Collection locations in rear of store

• Volume increased 31% year over year 2013 vs. 2014
• Up another 9% 2015 vs. 2014
Focus on Product Development

• Supply is not an issue
  – Abundance of volume available

• Just because you collect film does not ensure you will have an end market
  – The end user sets requirements for stream
  – It is not cost effective / economical to sort the materials once they have been collected and baled
  – The material will never be equal to virgin quality
Emphasis on Changing the Product

• Not cost effective to recycle commercial stretch film into more clear stretch film
• You can make something functionally acceptable, but it may look different
• Make something new to accommodate these differences
  • Lumber
  • Containers
  • Pipe
  • Trash Bags
• Product application development takes TIME
Guide to Using Recycled Content

• Identify a raw material stream
• Must be **committed** to using it in a product
• Understand that recycled materials are not the same as virgin
  – Will process differently, and will likely produce an end product that looks or performs differently
    • Requiring formulation changes to “recipe”
    • Requiring equipment and / or processing changes
Reconsider Your Product

• Think of Recycling Film like Recycling Crayons
  – Large variety of colors (types of films)
  – Challenge: How do you make an individual product out of a mix of materials?
  – When all of the colors of crayons are melted together you end up with Gray
  – It is difficult to make a good Lime Green from Gray
  – Instead of original intention – multi-colored crayons for children – produce a Gray carpenter’s crayon
Challenges Recycling PE Film

• Stretch film family contains 20-30 different types of films for differing applications
  – Hexene vs. Butene
  – Blown vs. Cast
  – Differing strengths of end product
  – Differing grades of end product

• Inside a clear “stretch film” bale there can be a lot of variability in the types of film collected

• Even greater variability when you add post consumer film, color, etc.
Challenges Recycling PE Film

• Additional variability in material stream
  – Melt
  – Moisture Content
  – Color
  – Contamination
    • Sortable – some paper, metal, some rigids, etc.
    • Not sortable – paper labels, PP film, dirt, etc.
  – Density, etc.

• This can vary bale to bale, load to load
Evolution in Trex Recycling

• Started using recycled HDPE single use shopping bags
  – Natural Legacy Trex
• Changed Product – accommodate color of recycled HDPE film stream
  – Winchester Gray Legacy Trex
• Changed Process – added use of LLDPE film
  – Addressed mixing, extrusion, dies
Evolution in Trex Recycling

• Changed Process – added use of LDPE film
  – Addressed mixing, extrusion, dies
• Changed Process – interested in consuming highly contaminated film streams
  – Added wash operations
• Changed Process – interested in addressing sortable & paper contamination (labels)
  – Added sort line & melt filtration operations
Evolution in Trex Recycling

• Changed Process – interested in consuming streams containing polypropylene film
  – Increased blending / homogenization
• Changed Product & Process – now able to consume more contaminated film streams
  – Created Transcend product line
    • Also addressed consumer request for improved finish
  – Co-extrusion – additional equipment investment
In Summary

• There needs to be a long term commitment to buying and consuming recycled content

• It will not be easy, and there will be many adjustments to both:
  – The end product you are producing
  – The process in which you produce it

• Work with your direct supplier to optimize material supply as process & product are revised
Thank you!

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