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# Recycling Refinement

HOLLY ELMORE, EI  
LORRAINE WHITE, M-PASS

**CHARLOTTE EI PARTNER TOURS**  
CONCORD MILLS, NC  
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# Elemental Impact

*... moving beyond landfill diversion*

- ◎ Focus on source-separation at large venues
- ◎ Direct sales to mills & recycling destinations
- ◎ Creation of recycling profit centers



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A CATALYST

## Plastic Film Recycling

**... in the beginning**

- ⊙ Manufacturers switch from bulk retail packaging to single-garment packaging
- ⊙ Shopping mall plastic film skyrockets – most going to landfill
- ⊙ Ei | Hilex Poly | Orwak | Simon Malls partner in 2011



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# PARTNER PROGRAM

## SFCI – Concord Mills:

- ◎ Tenant plastic film collected via the mall porter service
- ◎ August, 2012 Orwak baler delivered
- ◎ To Date 50,000 pounds plastic recycled
- ◎ Film rebates offset baler | labor costs; bottom line improvement from reduced waste hauling charges to the landfill



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TAGLINE

City-Wide

# Plastic Film Recycling

Template Pilot

Atlanta, GA



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## TAGLINE

the city-wide game plan is to recruit 10 - 12 industry pioneers who generate a moderate amount of plastic film in their operations. Using a small baler, the pioneers collect and bale plastic film on-site for periodic collection. A local hauler collects and delivers the small bales to a warehouse. The small bales are re-baled into standard size larger bales and stored in an empty tractor trailer. Once full, the plastic film is sold by the tractor trailer load as a raw material to a plastic bag manufacturer. Atlanta serves as the pilot city for the plastic film recycling template.

*Please break up into slides re: game plan*



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## Ei Template Pilot Partners:

- ◎ FreshPoint
- ◎ Hilex Poly
- ◎ M-Pass
- ◎ Orwak

GA Tech, GWCC & ATL Airport may join the team



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If it was easy,  
It would already be done!

*Challenges Abound*





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## Challenges

Bottom Line Improvement:

Generator: baler and additional labor investment must be covered by reduced landfill tipping costs and material rebates.

Hauler: route density is key to minimize transportation costs.



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# FOCUS AREAS

## Commodity market volatility

- Fluctuations in commodity market prices create instability and undue risk within a program.
- Goal to sell film as a raw manufacturing material instead of a commodity



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# RECYCLING INTEGRITY

## Small baler infrastructure

- © most markets are void of existing haulers capable of efficient small bale collection.



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# RECYCLING INTEGRITY

## Limited storage

- ◎ Frequent collection is required as most generators have limited storage areas.
- ◎ Timing the collection routes to meet varying logistical requirements requires team effort among the template participants.



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# WATER

## Varying plastic film types

- ◎ template participants represent a variety of industries, each with a unique mix of plastic film types generated.
- ◎ necessary to determine the balance between bale value and energy required to create maximum value among the various film types.



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# WATER

Maximizing plastic film tonnage -,

- ⦿ a minimum of 37,000 pounds of plastic film must fill the trailer to justify transporting the tractor trailer to the manufacturer
- ⦿ As close as possible to the 44,000 pounds capacity is necessary to maximize value chain benefit.



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# PRODUCT

Small bales pose three challenges:

- 1> looser compaction yields lower pounds per bale
- 2> inefficient stacking in the trailer results in lower pounds per trailer load
- 3> additional unloading labor at the manufacturer due to increased number of retrievals for fewer pounds.



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## Recycling Center Creation

- ⊙ Possible partnership with UNICOR
- ⊙ December 01 ATL Penitentiary site visit
- ⊙ Week of December 09 D.C. meeting with federal UNICOR Recycling Division





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## Atlanta Pilot Status

- ⊙ Orwak trial baler delivered to Fresh Point
- ⊙ Plastic film bales collected by M-Pass & sold in local markets
- ⊙ GWCC & Atlanta Airport visited FreshPoint to witness plastic film baling process
- ⊙ Pilot video shoot scheduled on Friday, November 22



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## Template Documentation

- ① Develop training materials & signage
- ① Document Lessons Learned along with solutions
- ① Create a Frequently Asked Question document
- ① List template development stages along with listing action points



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## Expanding the Template

- ⊙ With fixed costs covered, participants may expand material source-separation generated in their operations
- ⊙ Team member & demand will determine municipalities who adapt the template to fit their unique characteristics