THE RECYCLING PARTNERSHIP

Smart Ways to Move Materials

Efficient Transport of Recyclables

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Mississippi Recycling Conference – October 2017

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Coca-Cola

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Carton Council

FPI Foodservice Packaging Institute

Heineken

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Novelis

PepsiCo

Target

Tri-Arrows Aluminum Inc.

WestRock

3M

American Forest & Paper Association

Consumer Technology Association

Danone Wave

Dow

Plastics Industry Association

RWIP Recycling Works in Publishing

WM Waste Management

DART

IBWA International Bottled Water Association

Sonoco

THE RECYCLING PARTNERSHIP

National nonprofit transforming recycling in towns all across America

We work across the system… across the country…

- STATE and LOCAL
- HAULERS
- MRF
- BRANDS
- RESIDENTS

466 communities impacted by Partnership work (19 million HH)

~400,000 carts
More than $27MM of new infrastructure and more than 115 MLBS of new recyclables diverted.

…growing access to resources and data.

A FEW OF OUR PARTNER CITIES


COLUMBIA, SC


FLORENCE, AL


CUYAHOGA CO., OH


GREENVILLE, SC


EMMET CO.,MI


RICHMOND, VA


SANTA FE, NM


ATLANTA, GA


ST PAUL, MN


CHICAGO, IL

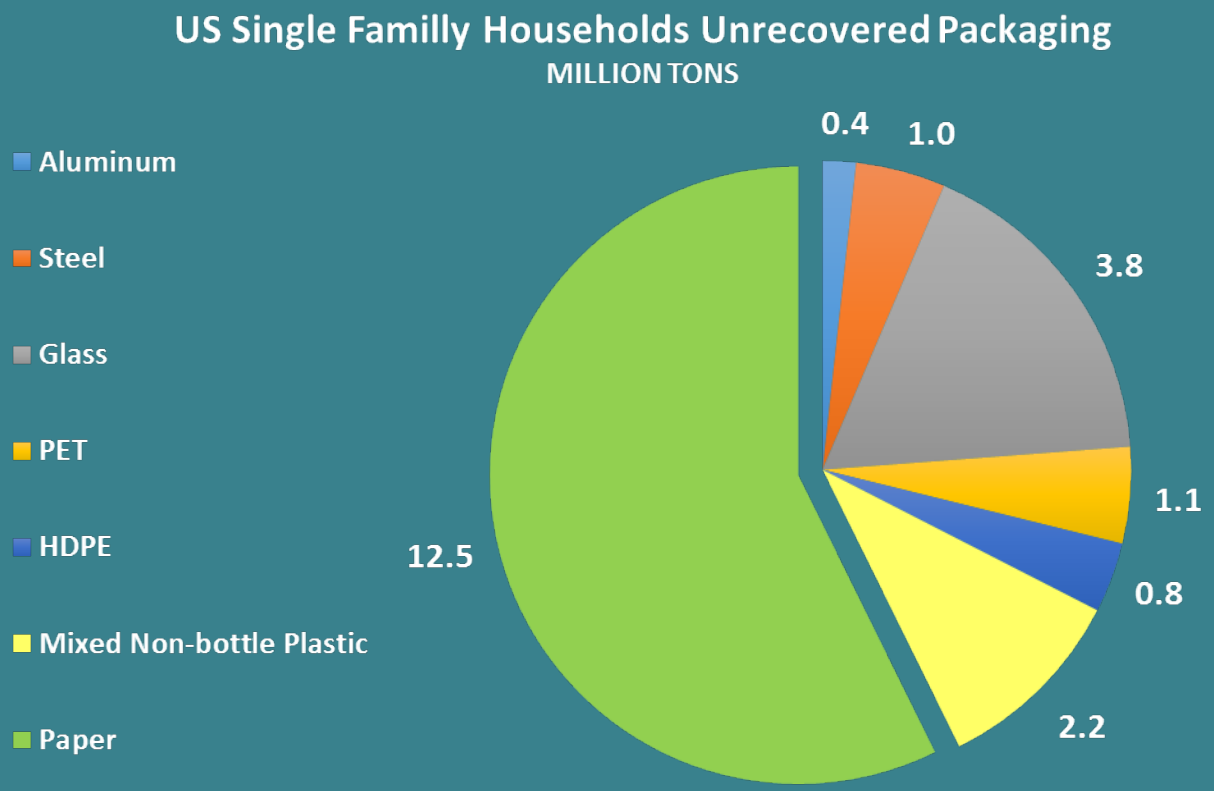

PORTLAND, ME


MEMPHIS, TN

- We work with cities to reduce contamination, boost participation, and recycle with carts.
- National scale with projects in 466 communities.
- Project-based collaboration with all stakeholders in the recycling system: haulers, MRFs, communities, state offices and end-markets.

How Much Recyclable Packaging Is Left in Single Family Homes?

Hypothetical Example



Total of 22 Million Tons



contamination
cost the system **money & time**,
and **safety hazards**
for workers.

The Recycling Partnership

IT TAKES A TEAM TO DELIVER TONS



Preserving the environment is the responsibility of everyone: the government, the public, nonprofits and businesses.

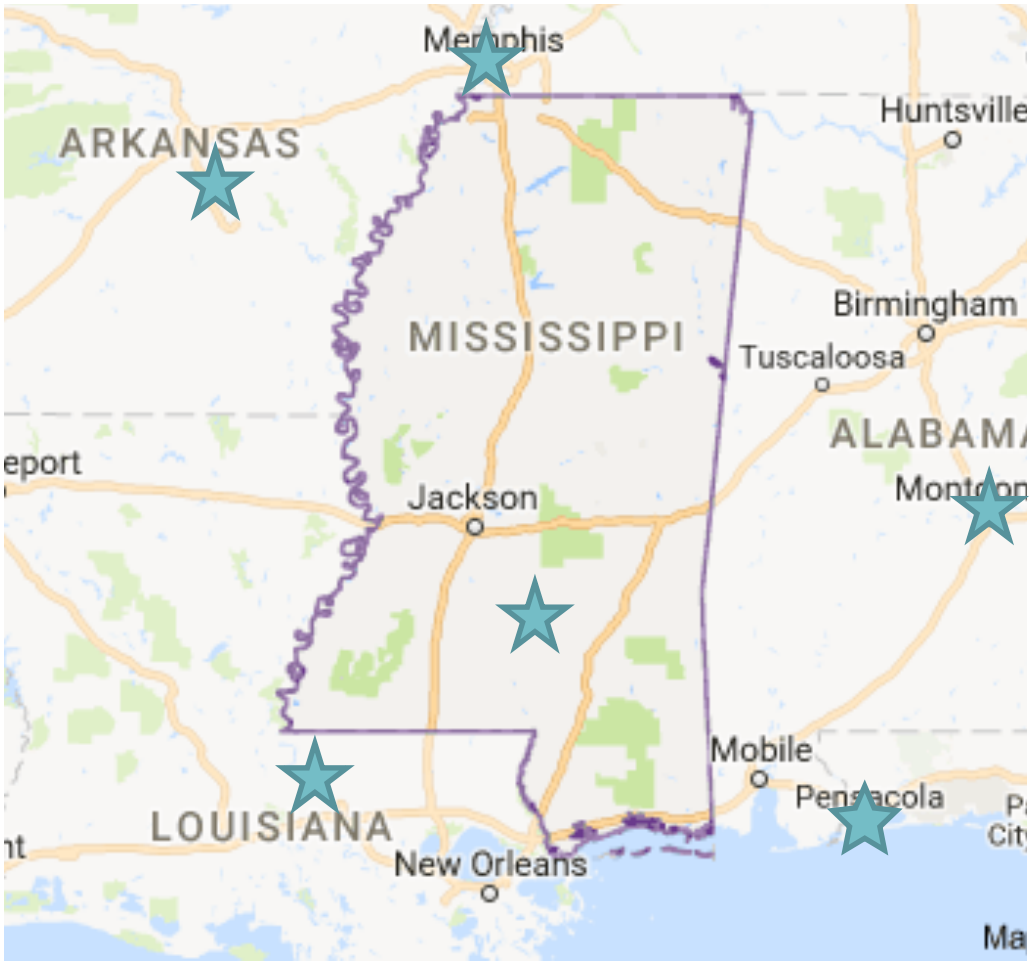
Cutting Costs in Recycling

- Transportation is the most expensive aspect of recycling
  - High fixed costs
  - Recyclables are generally light payloads
- Processing infrastructure (MRFs) can be far away from collection points and from regional programs

Challenge of Distance to Processing

- Single Stream MRF distant from most MS locations
- What is the best way to connect to MRFs with lots of tons?

= actual or potential single stream MRF



Meeting Transportation Challenges



Solutions:

- Compaction at collection sites
- Transfer stations for long distance deliveries
- Tractor trailers for high volume loads



THE RECYCLING PARTNERSHIP

Some General Principles

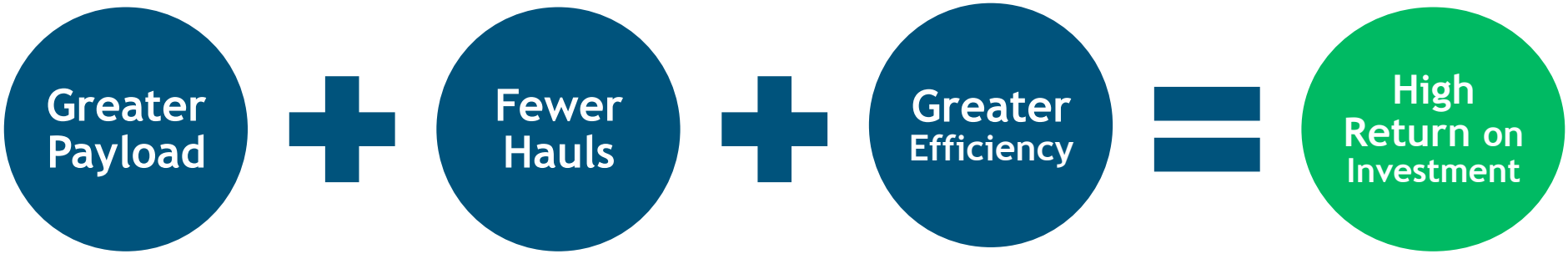
- Gravity is your friend
- Less handling = more efficiency
- A little squishing goes a long way





Compaction - Efficiency for Drop-off Programs

- Good for short distance direct haul
- Increased payload = less overall hauls
- 3:1 reduction in collection costs
- Decreased footprint at collection sites / better use of space



Common Approach: Source Separated Drop-Off

- Source–separation pros:
  - No sortation processing(MRF) needed
- Source-separation cons:
  - Multiple containers and signs
  - Frequent servicing
  - More work for citizens
  - Low tonnage per load





Commingled Compaction

- Requires concrete pads and electrical service
- Quick payback from reduced hauls



STATIONARY

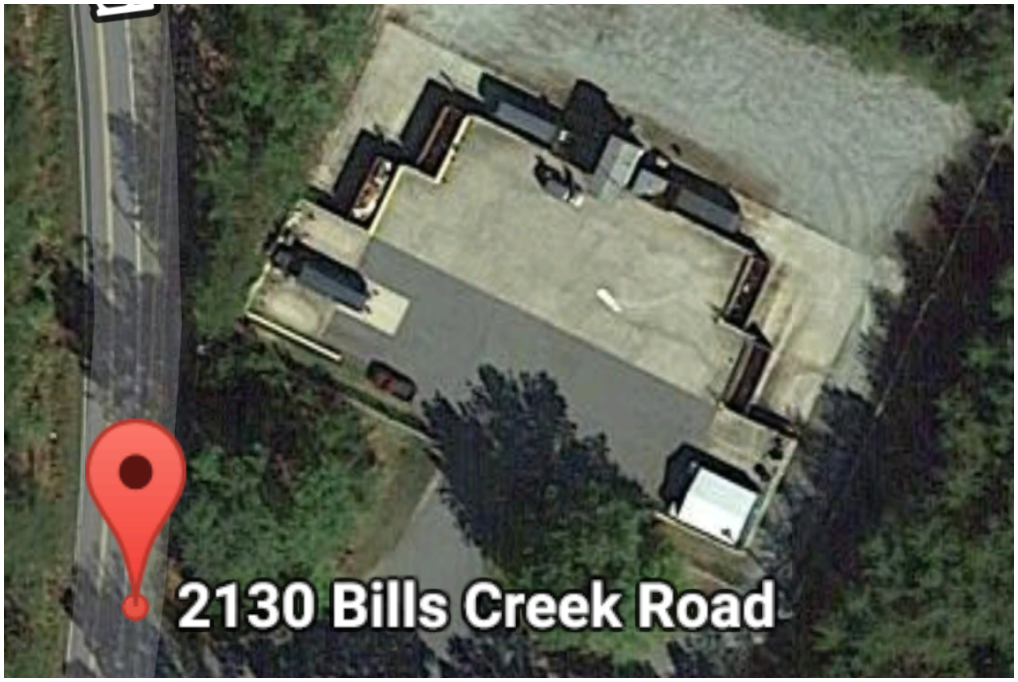


SELF-CONTAINED

- Stationary and Self-Contained cost about the same
- Stationary compactors allows switching out of containers

Savings in Rutherford County, NC

- Installed single stream compactors at 2 sites in FY 2013-14
- Results: faster service times, fewer pulls



BILLS CREEK SITE

BEFORE: **3** TRIPS/MONTH AT **$180**/TRIP

AFTER: **1** TRIP AT **$108** PER TRIP

ANNUAL SAVINGS OF ***$5,184***

DANIELTOWN SITE

BEFORE: **12** TRIPS/MONTH AT **$108**/TRIP

AFTER: **2** TRIPS AT **$72**/TRIP

ANNUAL SAVINGS OF ***$13,824***

Richmond County, NC – Lower Cost Per Ton



US HIGHWAY 1 CONVENIENCE SITE							
BEFORE				AFTER			
Month / Yr	Recycling Tonnage	# of Service Trips	Service Cost	Month / Yr	Recycling Tonnage	# of Service Trips	Service Cost
Jan-16	3.12	2	$600.00	Jan-17	n/a	n/a	n/a
Feb-16	2.67	2	$600.00	Feb-17	n/a	n/a	n/a
Mar-16	3.57	3	$900.00	Mar-17	7.01	1	$300.00
Jan-17	6.22	4	$1,200.00	Apr-17	14.29	2	$600.00
Total	**15.58**	**11**	$3,300.00	**Total**	**21.3**	**3**	$900.00
Avg. Cost / Tn			**$211.81**	**Avg. Cost/Tn**			**$42.25**

Greene County, NC – NC Grant for Two Compactor Sites





Greene County, NC – NC Grant for Two Compactor Sites

Project items	State Funds	Local Funds	Expenditure
Two signs listing materials accepted	$420	$0	$420
Two self-contained compactors	$30,000	$6,429	$36,429
Total Expenditures	$30,420	$6,429	$36,849

Greene County, NC – NC Grant for Two Compactor Sites

Greene County NC Fourway Convenience Center					
BEFORE			AFTER		
Month/Yr	Tonnage	# of Trips	Month/Yr	Tonnage	# of Trips
3/31/2016	2	2	3/31/2017	4	1
Avg. Tons / Service Trip Before =		1	Avg. Tons / Service Trip After =		4



New Chatham County Compactor




Put in Mixed Recycling
Aluminum Cans
No foil or trays
Steel Cans
No scrap metal
Cardboard & Pizza Boxes
No food or heavy grease
Remove recyclables from plastic or paper bag. All items must be loose.
Office Paper, Magazines, Newspaper, Paperbacks, Paper Boxes, Paper Cartons
Plastic Bottles, Plastic Tubs, Plastic To-Go Containers
Leave caps and lids on
No liquid or food waste
Rigid Plastics
No electronics
Must fit in 96 gal cart
Minimal metal
DO NOT put in Mixed Recycling
If you are not sure about an item, ask the attendant!
Glass must go in the Glass Recycling
No plastic bags
No Styrofoam
No paper towels
No shredded paper
No aluminum trays
No aluminum foil
No hoses or other tanglers
No containers that had hazardous materials

Hub & Spoke

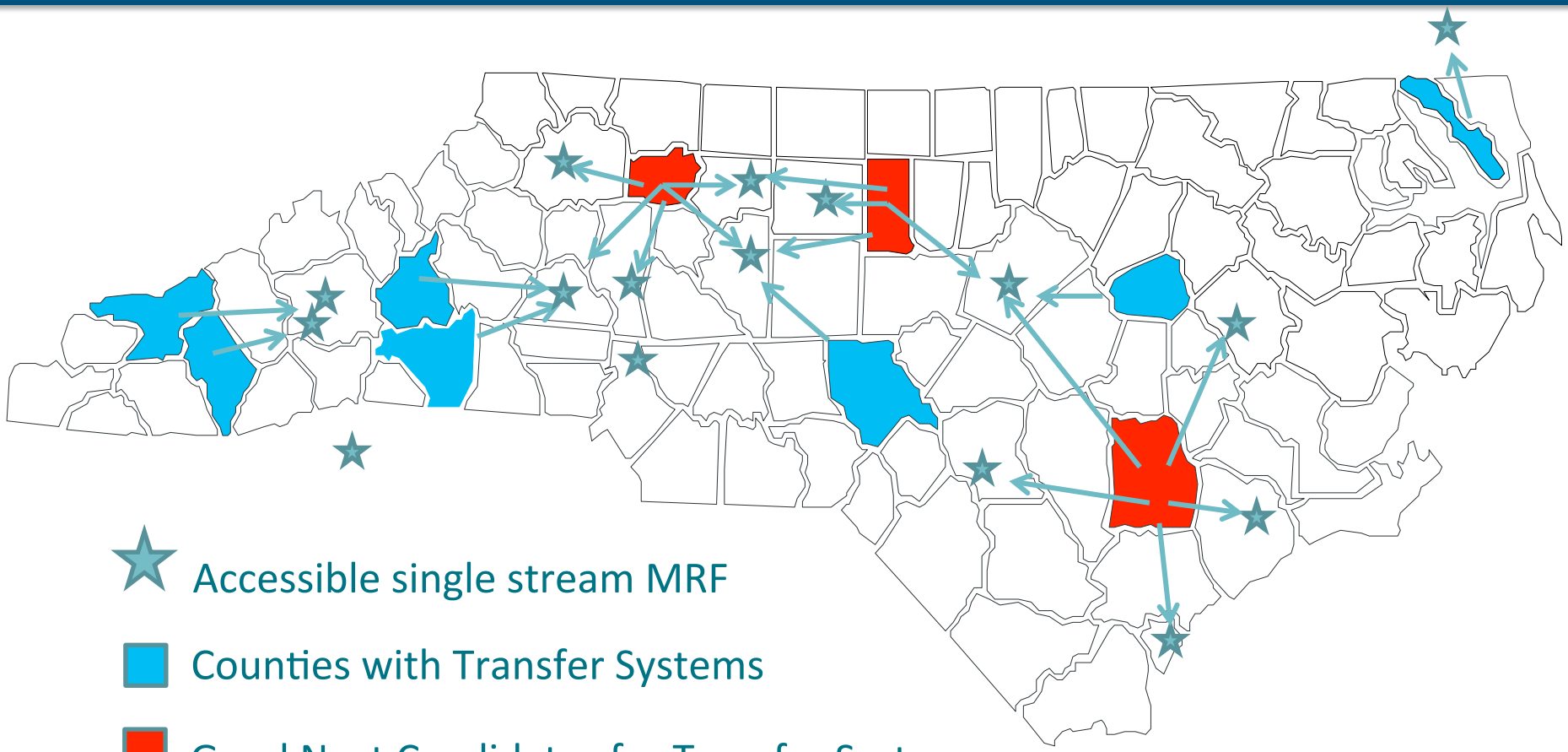
Transfer system for commingled recyclables to a MRF

- Access to distant MRFs
- Increases payloads/decreases cost
- Brings commingling to areas without nearby MRF

Hub and Spoke Transfer Station Options:

- Sharing one bay of existing waste transfer station
- Creation/use a second bay for recyclables
- Creation of dedicated transfer system for recyclables

Hub & Spoke System in NC



One-Bay Transfer Station – Moore County, NC





- Little up-front cost but requires coordinating with waste transfer
- Note storage area for holding materials while managing MSW

Dedicated Transfer Station for Recyclables

- Big investment – immediate, durable benefits





WILSON COUNTY, NC

- Construction ~ $430,000
- $150,000 for tractor and walking floor trailer
- 40-50 tons/week – 9 to 13 tons/load
- $28/ton tip fee to municipalities and businesses – lower than trash

Jackson County – Dual Stream System

- Sends out around 16 to 20 loads of recycling/month.
  - 50 miles to the MRF in Asheville
  - Around 10 tons on commingled container loads
  - Around 12-14 tons on paper loads.
  - Transport cost is $350 per load

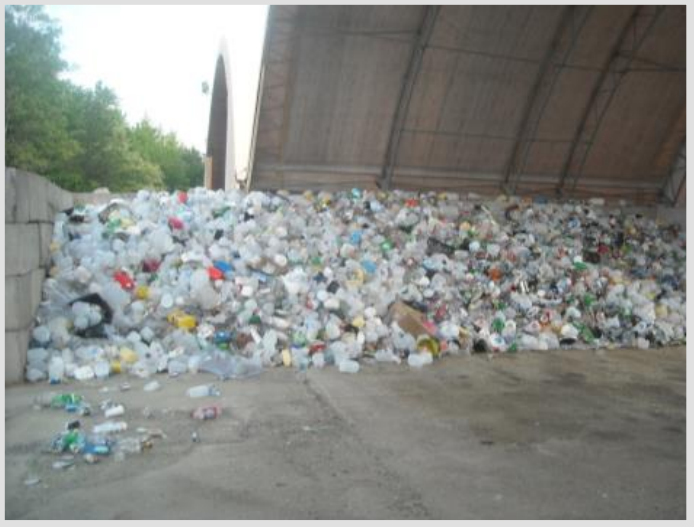


Dedicated Transfer – Minimal Cover

ORANGE COUNTY, NC









Two Bay Transfer Station – Rutherford County, NC



- Construction ~ $550,000
- 14 -16 tons per load average, sometimes 18
- MRF contract includes transportation

Hub & Spoke Helps Small Towns Run Efficient Programs

- Transfer Station facilitates adoption of cart-based recycling in Rutherford County towns
- Towns that now have single stream curbside collection:
  - Rutherfordton
  - Spindale
  - Ellenboro
  - Forest City
  - Ruth



A Different Approach Using Compactor

- Compactor with upper level feed
- Consolidation of loose plastics and transport to MRF ~40 miles away





Making the MRF Connection

Key Questions:

- Who will transport material?
- At whose costs?
- What are those costs?
- Prices at transfer point or at delivery point?
- Processing fee?
- Who pays residue costs?
- Possible revenue share?
- Contract or no contract?
  - Term of contract?



THE RECYCLING PARTNERSHIP

Thank You!

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