

# A NEW WORLD ORDER

*SPECULATING ON THE FUTURE RELATIONSHIPS BETWEEN  
COMMODITIES, PUBLIC RECYCLING, AND RELATED TOPICS*

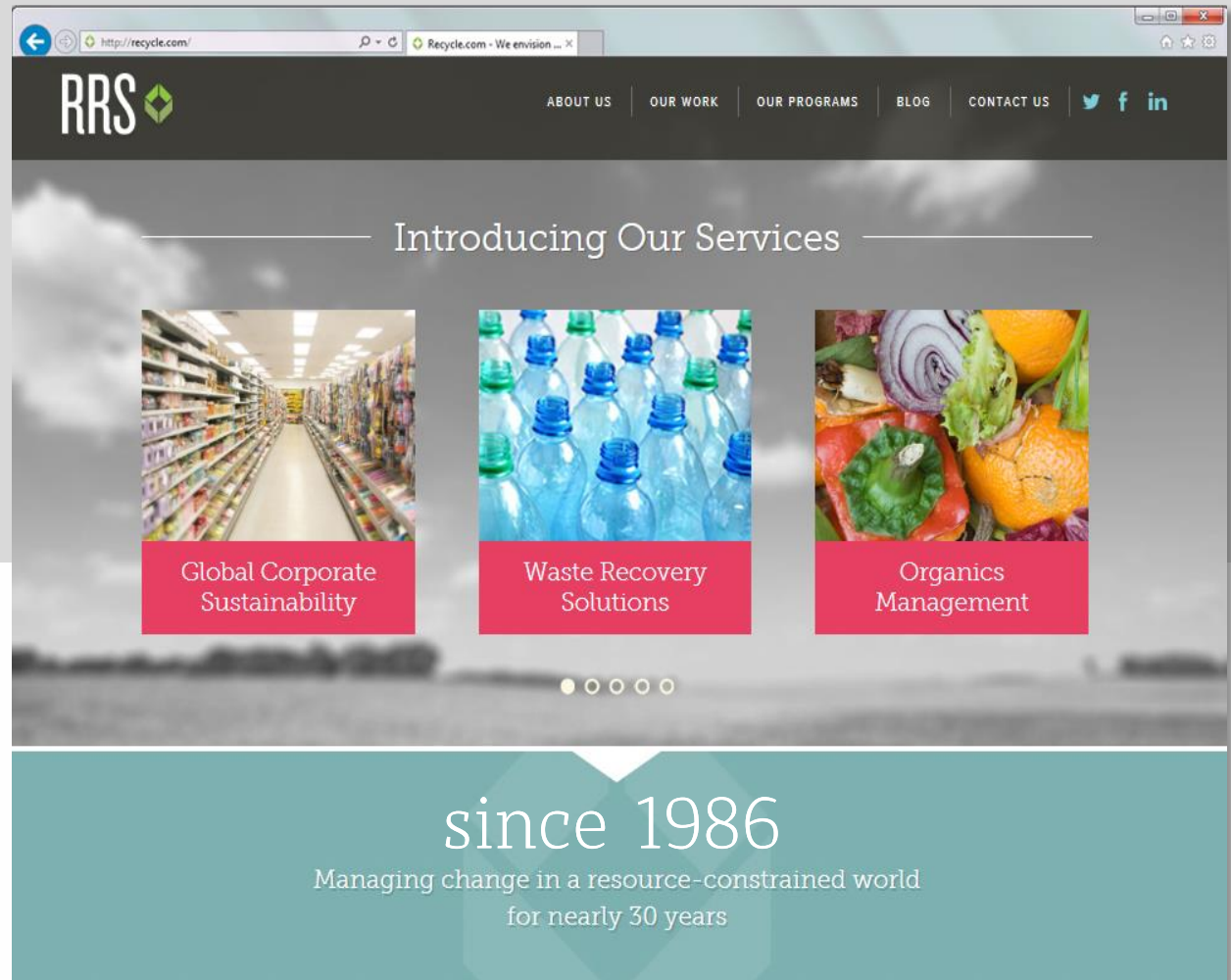
MICHAEL TIMPANE, RRS | VICE PRESIDENT

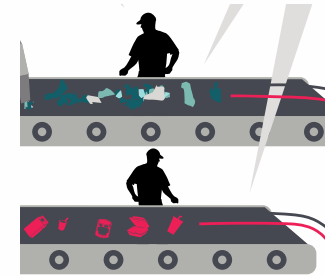
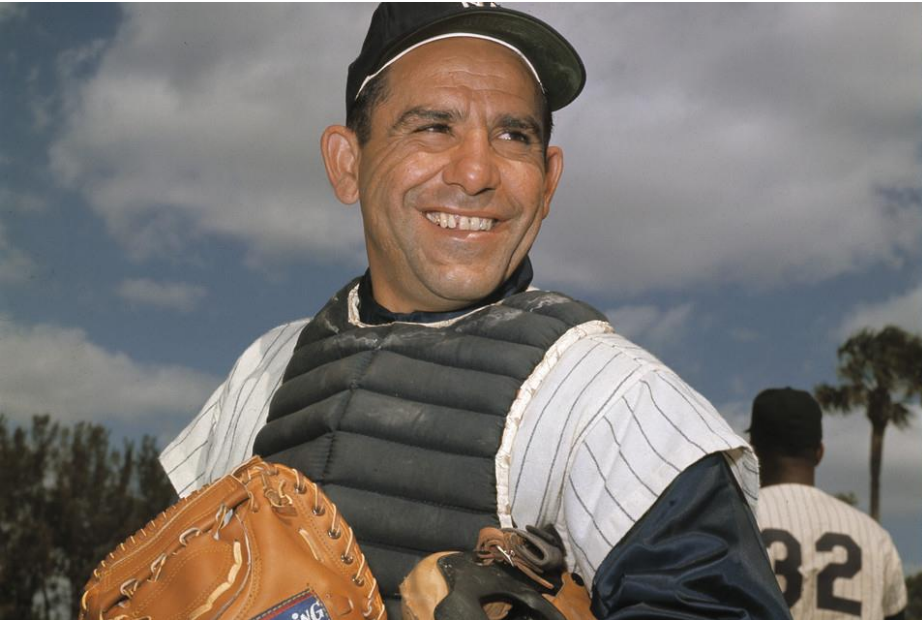
Resource Recycling Conference | September 2015

Providing solutions to  
meet sustainability,  
resource management  
and waste recovery  
goals of clients and  
their supply chains



managing change in a  
resource-constrained  
world.



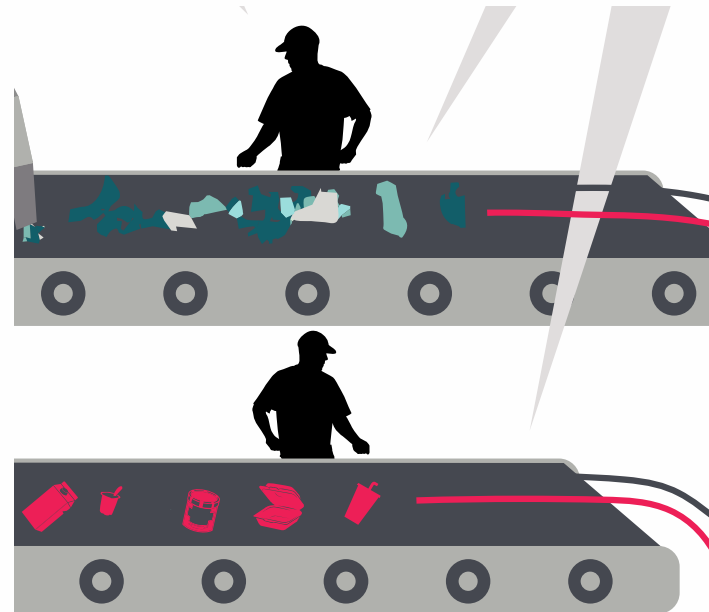


" **Slump?** We ain't in no **slump**... we just ain't hitting"

# Cost Trend at MRFs

## Last 8 Years of Single Stream

- +/- \$10 T
- Assumptions based on updated studies, interviews and available information
- Averages MRFs- N. America from public sources
- Costs generally higher in Northeast, West Coast, and Canada
- Recycling is a good worth doing- no time to debate that here

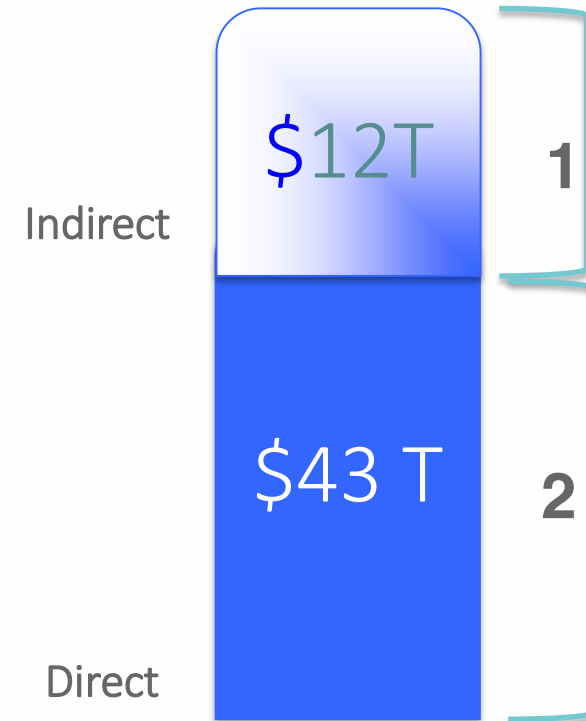






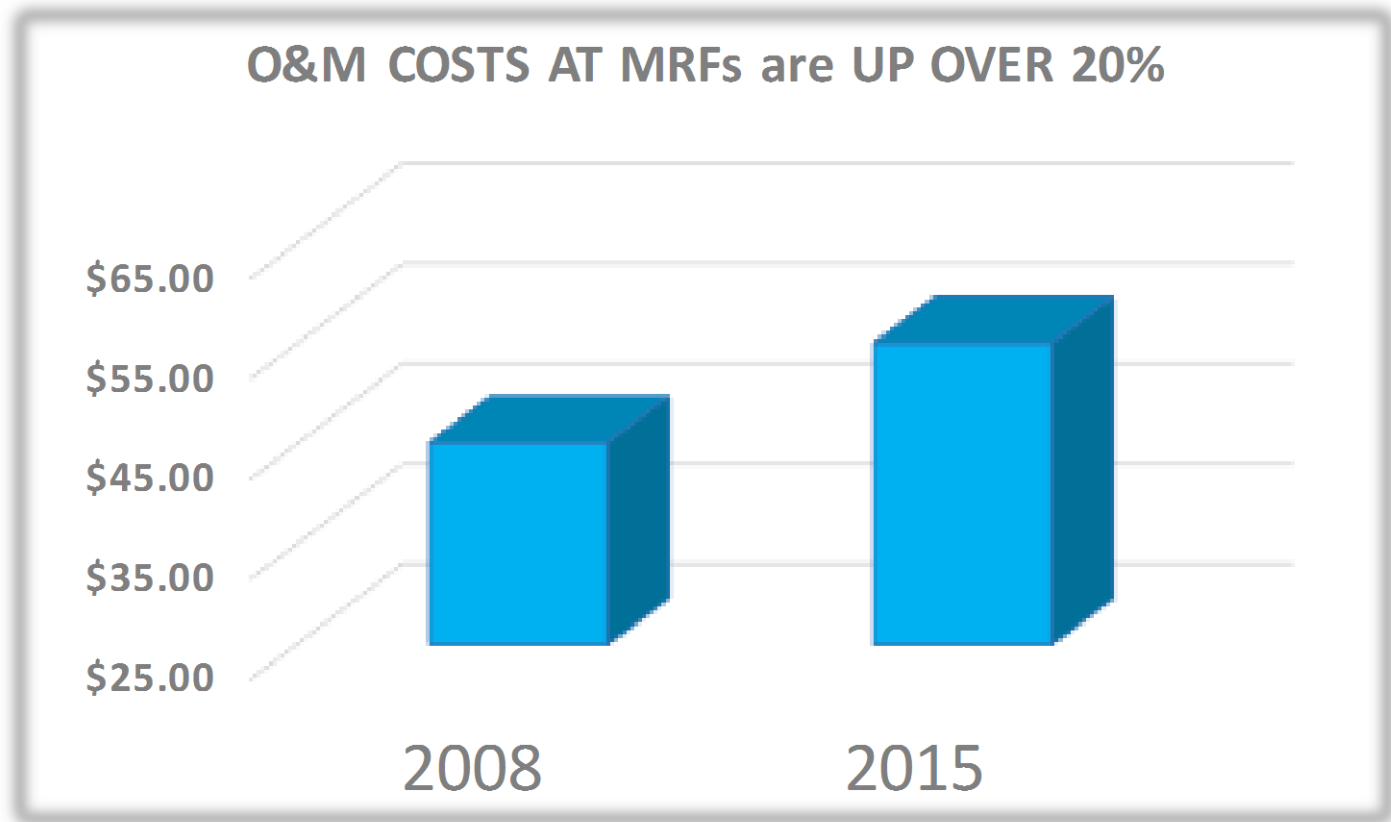
## SINGLE STREAM PROCESSING - O&M

- More and lighter units
- More types of material
- More complicated layouts
- More downtime & maintenance



# SINGLE STREAM PROCESSING

*\$/T Received*





## Plant Capital Costs for Avg. Single Stream processing line Doubled!

*Up about \$10 T*



\$8-12M



\$15-20M





# ON-GOING SINGLE STREAM PROCESSING COSTS ARE \$20 HIGHER THAN 2008



FIXED

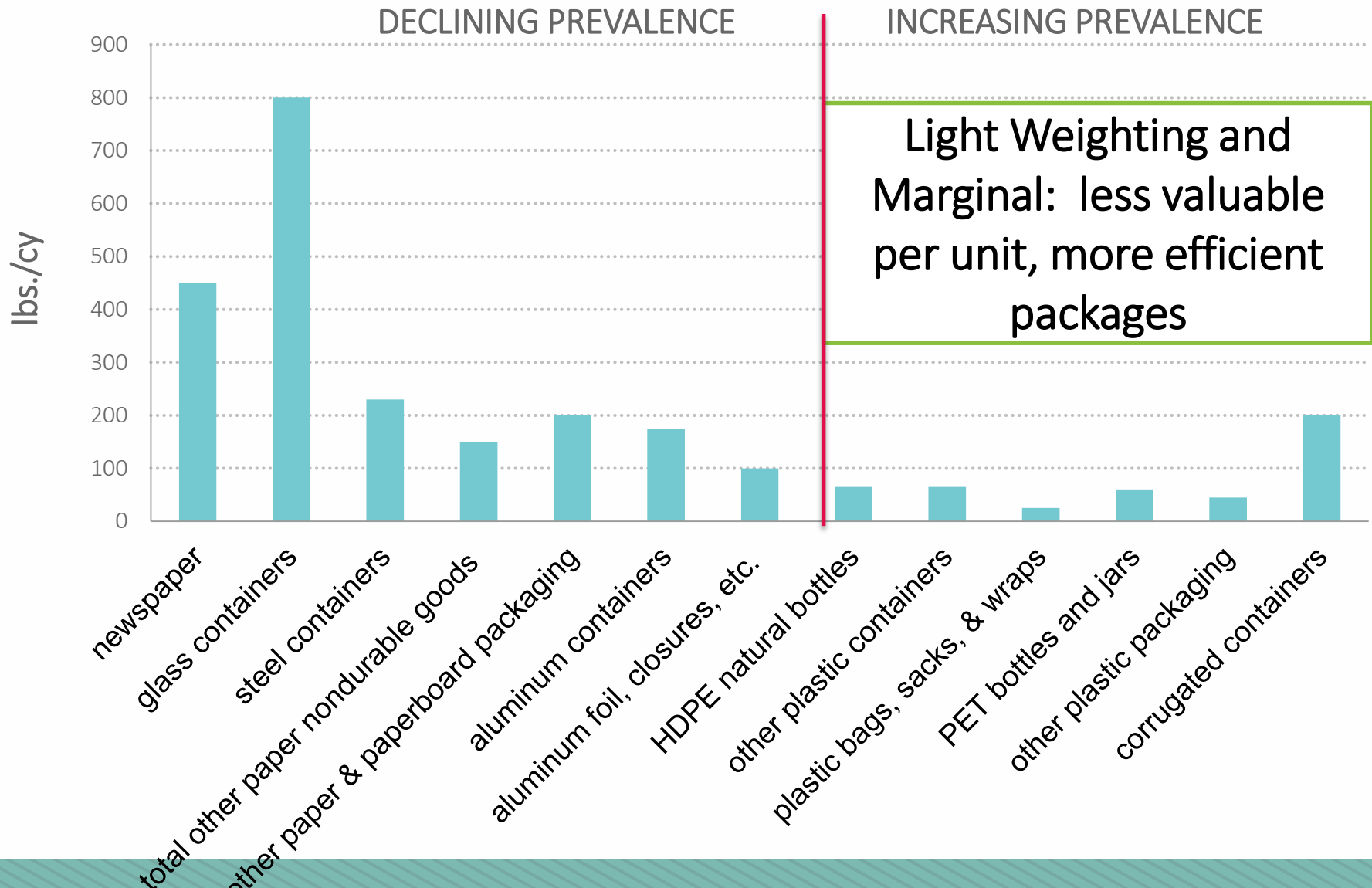
\$20T

VARIABLE



\$55 T



## REASONS: OLDER CARDINAL MATERIALS GIVE WAY TO LIGHTER AND MORE EFFICIENT PACKAGES IN THE STORES

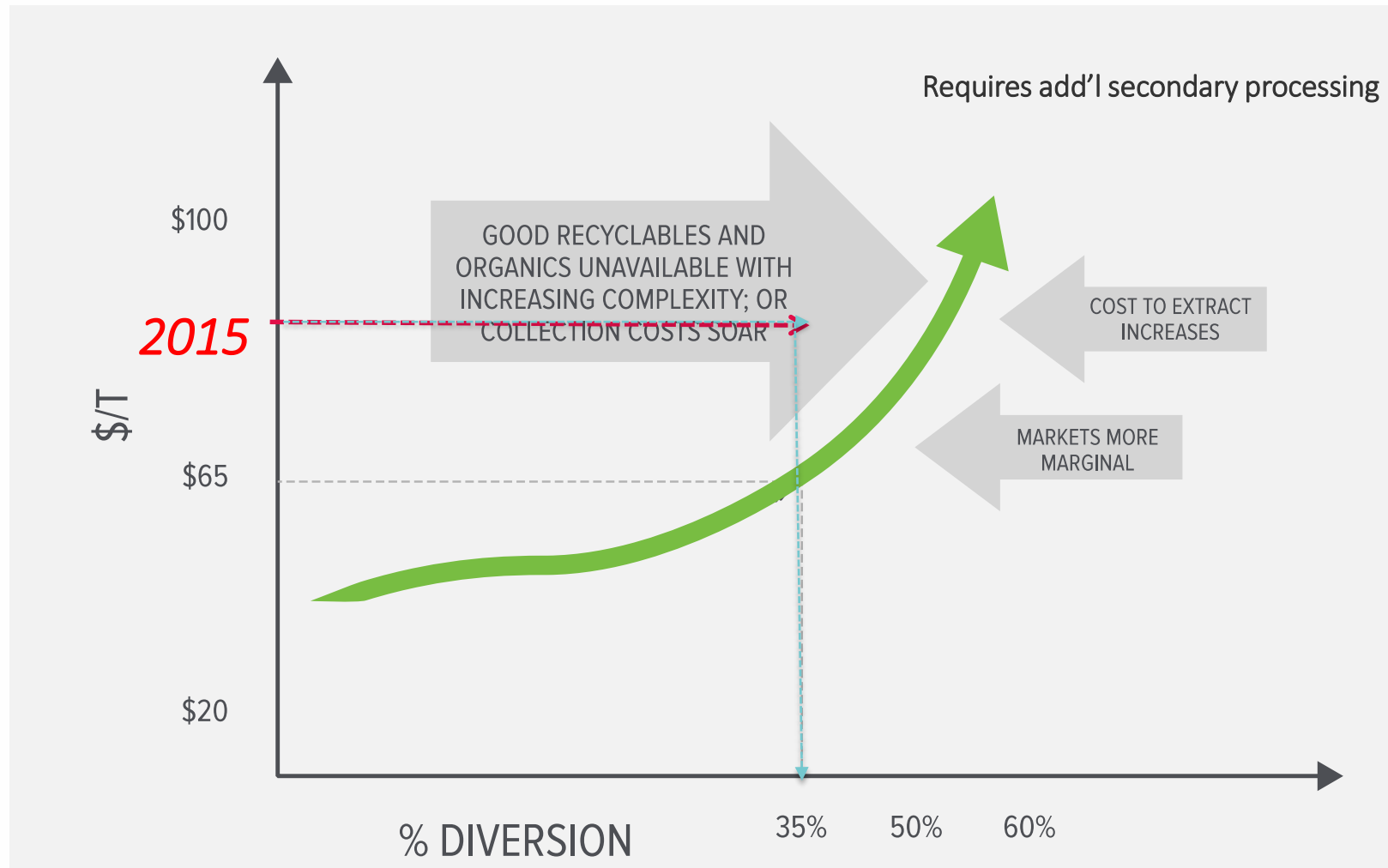


## REASONS: More Types of Material

2007	2015	
Fiber	Fiber	
Newspaper and inserts	Newspaper and inserts	
Cardboard	Cardboard	
Paperboard	Paperboard	
Junk mail	Junk mail	
Ledgers, files, computer paper	Ledgers, files or computer paper	
Magazines, catalogs, directories	Magazines, catalogs, directories	
Paperback & hardcover books	Paperback & hardcover books	
	Other HH Fiber- Cups, containers etc.	
Containers	Containers	
Aluminum cans and foil (clean)	Aluminum cans and foil (clean)	
Steel cans	Steel cans	
Aerosol cans (empty))	Aerosol cans (empty), except paint cans!	
Glass bottles & jars	Glass bottles & jars	
Six-pack ring carriers	Six-pack ring carriers	
1 PETE): Soft drink & water bottles	1 PETE: Soft drink & water bottles; thermoform clamshells, ball holders	
2 HDPE: Milk jugs, detergent bottles	2 Milk jugs, detergent bottles	
	#52 Beverage cartons	
	Plastic Shopping bags	
	3 (PVC): Health & beauty aide, cooking oil bottles & household cleaners	
	4 LDPE (LDPE): Margarine tubs & lids, dessert cups, six-pack rings	
	5 (PP): Yogurt cups, syrup bottles, deli trays, and caps/lids. Clean Plant pots.	
	6 PS: Rigid #6 plastics , coffee lids, bakery containers; No Styrofoam or utensils	

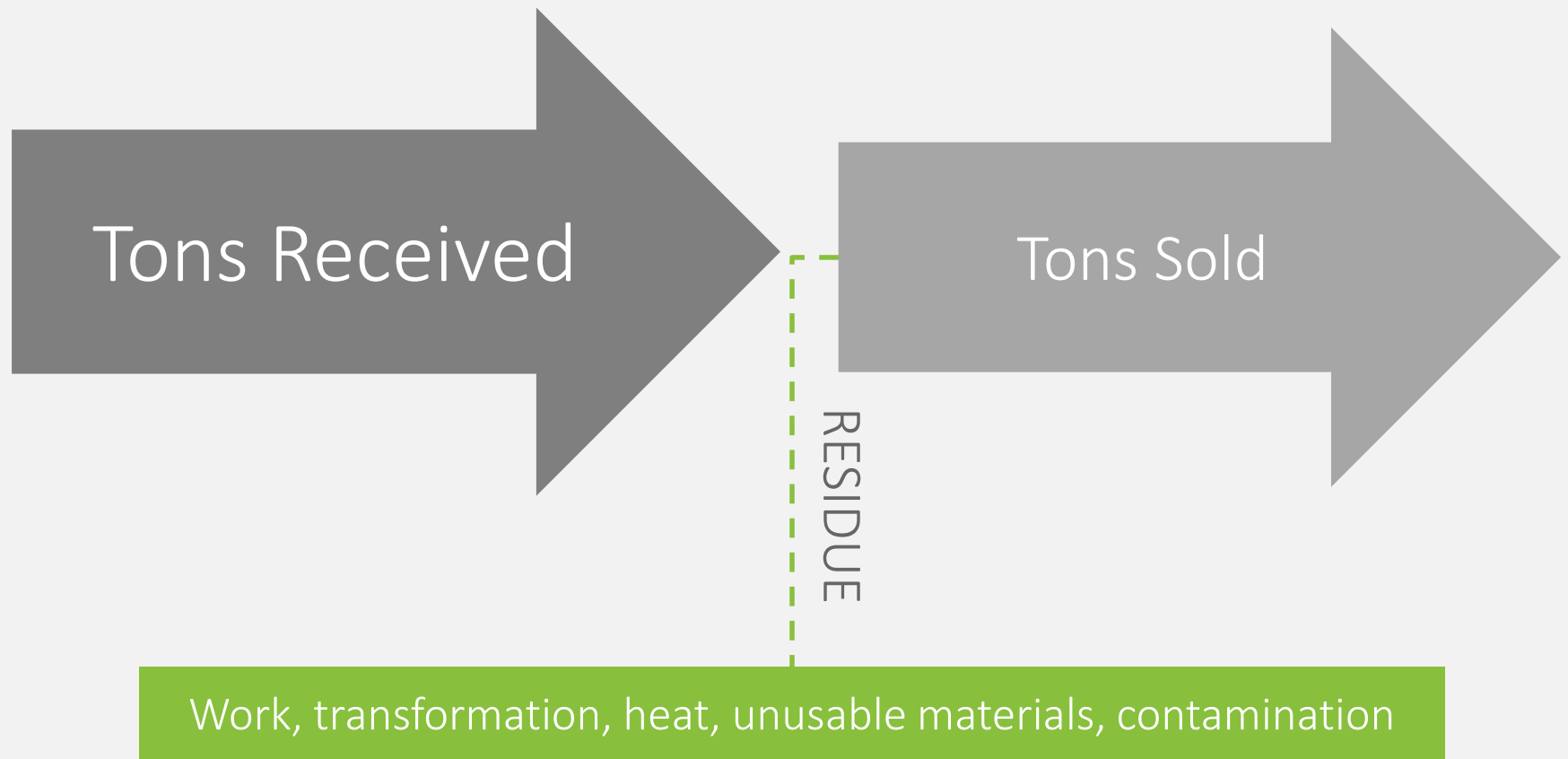
# REASONS: DIVERSION PROCESSING CURVE APPLIES

2009 COUNCIL OF U.S. MAYORS

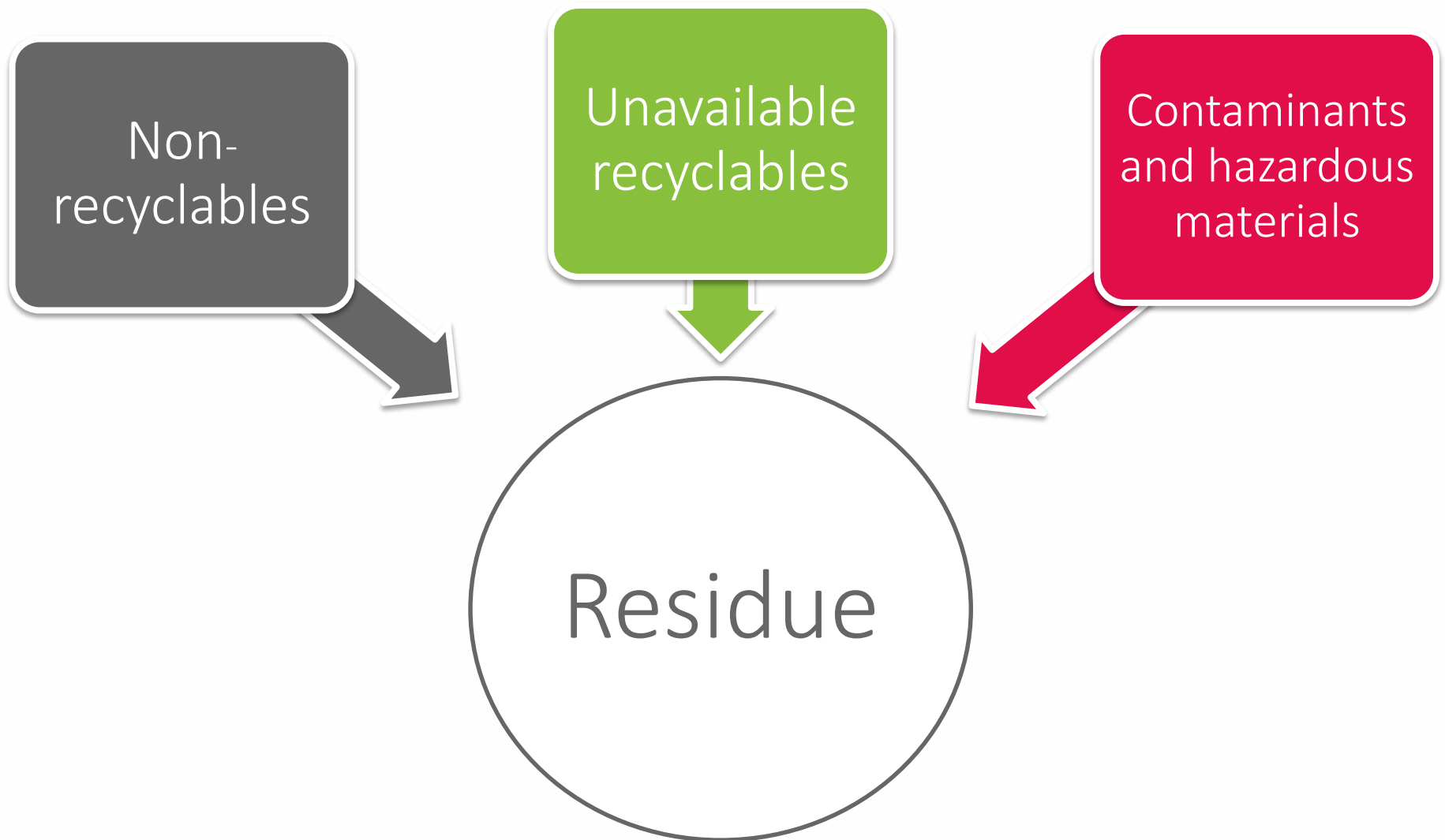




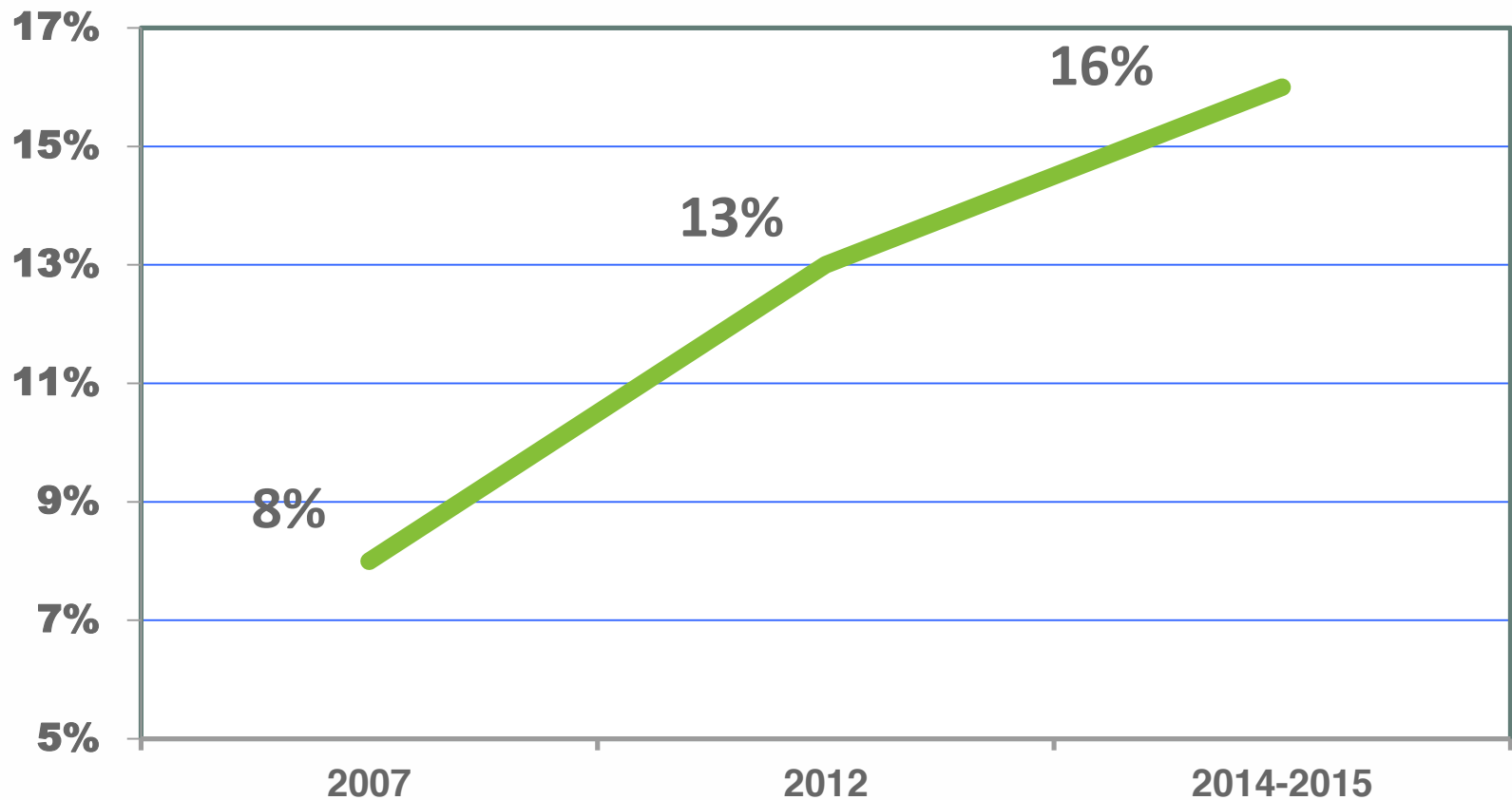
## REASONS: MORE RESIDUE FROM MORE WORK WITH INCREASING COMPLEXITY







## Average Residue at Single Stream MRFs



Sources: 2007 Comparative Study on Public vs. Private MRFs, 2012 GAA study on Wisconsin-Area MRFs, ISRI Moore Presentation April 2015



## RISING RESIDUE IN COMPLEX STREAMS

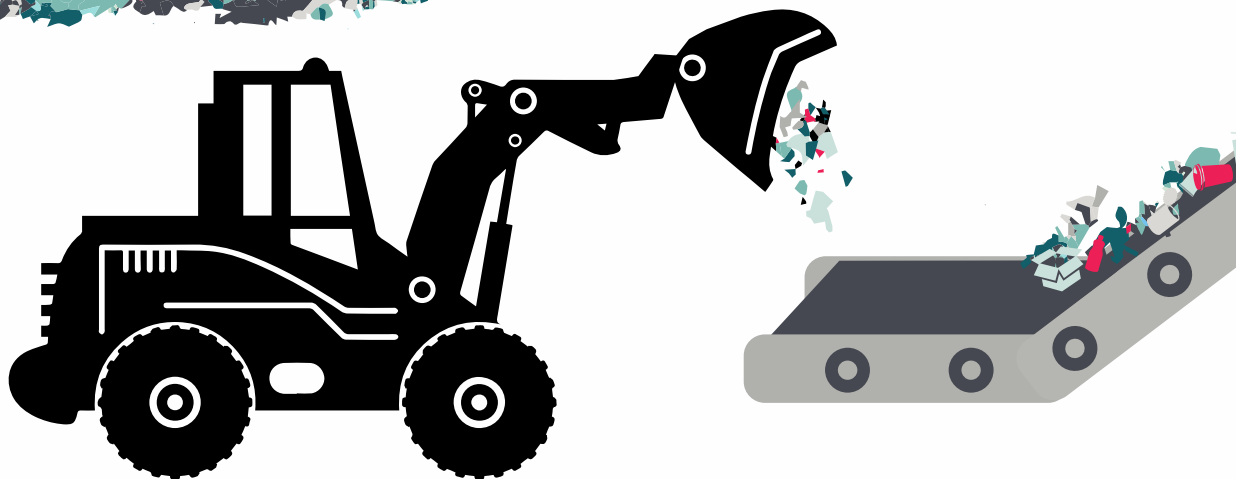
Year	%Residue	Comparative \$/T (Current LF \$/T)
2007	8%	<\$4
2012	13%	\$6.37
2014-2015	16%	\$7.92

*GAA Wisconsin Study; Moore, ISRI- 85  
MRFs*



## AVG SINGLE STREAM TOTAL COSTS \$/T (including disposal)

Single Stream Fleet Cost Impact \$165M/Yr. of these changes

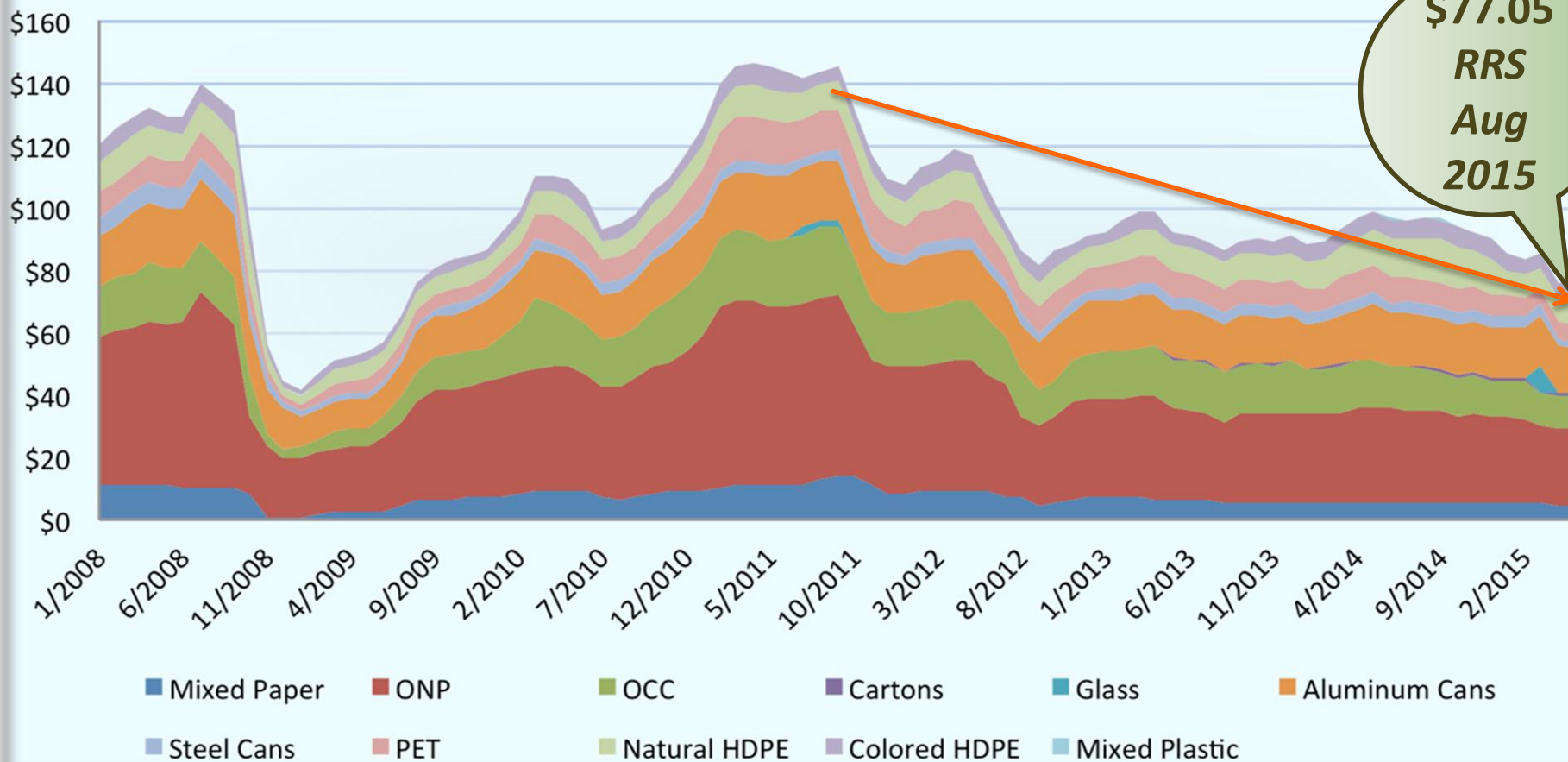




# PROLONGED DOWN MARKET

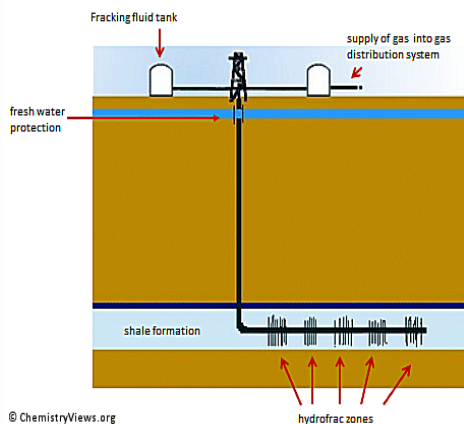
*System-wide Blended Value (ACR)*

## Average Commodity Revenue



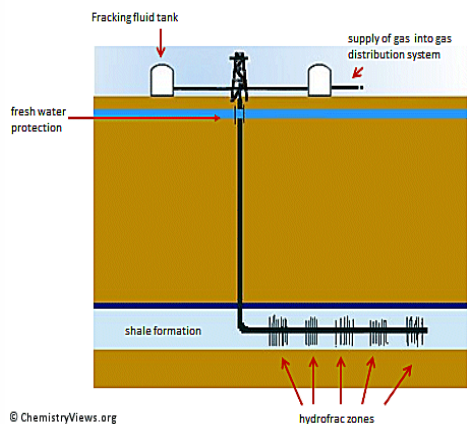
# BELLWEATHER LAST 5 YEARS :

Longest sustained recycled commodity trend in last 40 years



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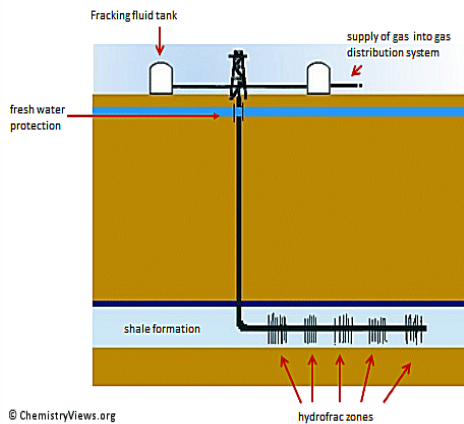
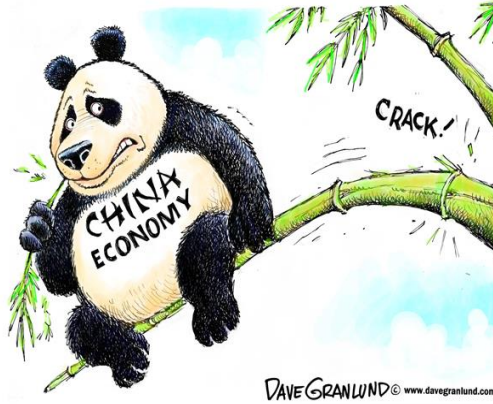
Longest sustained recycled commodity trend in last 40 years







BELLWEATHER LAST 5 YEARS :  
Longest sustained recycled  
commodity trend in last 40 years



world's largest oil and gas producer





## Cratering Commodity Trend

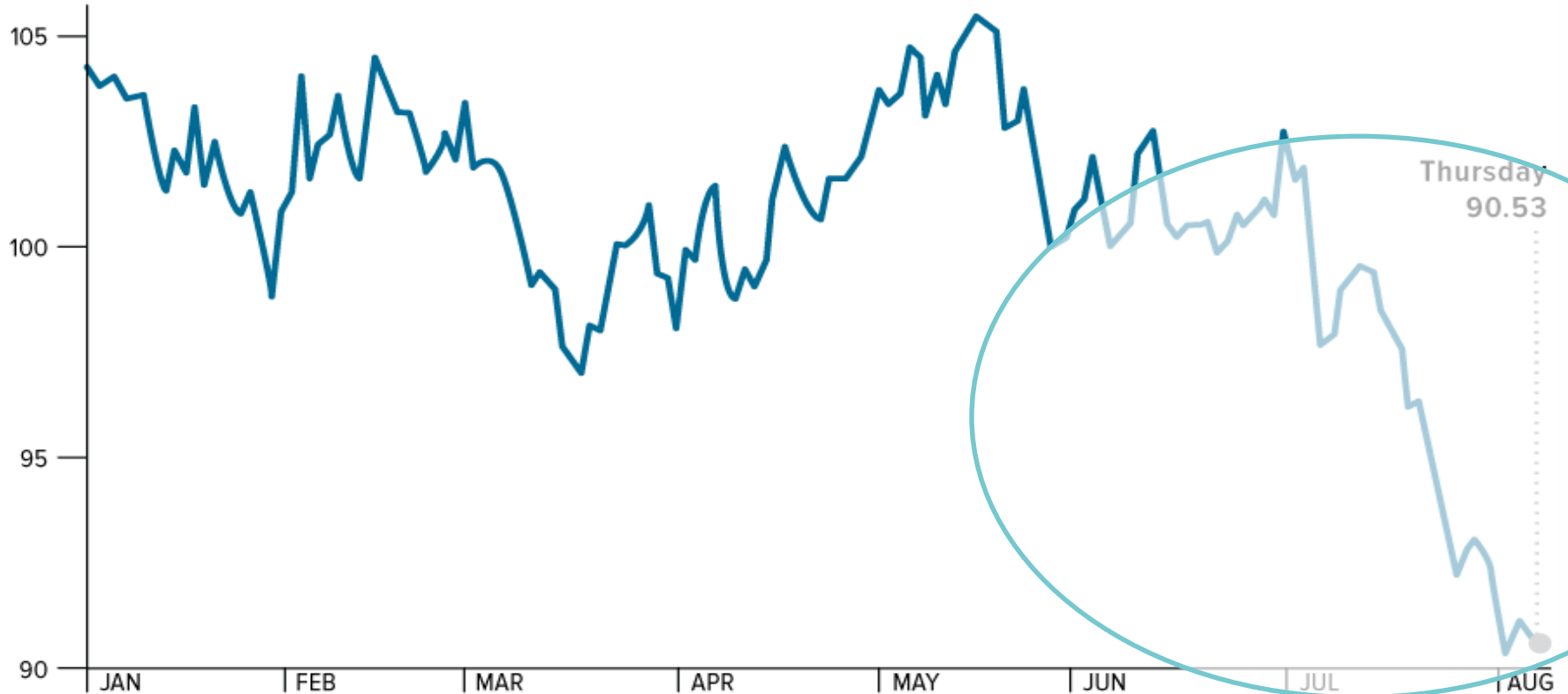




Cratering Commodity Trend- this is  
no “Cycle” it is a spiral

### Have Commodities Hit a Bottom?

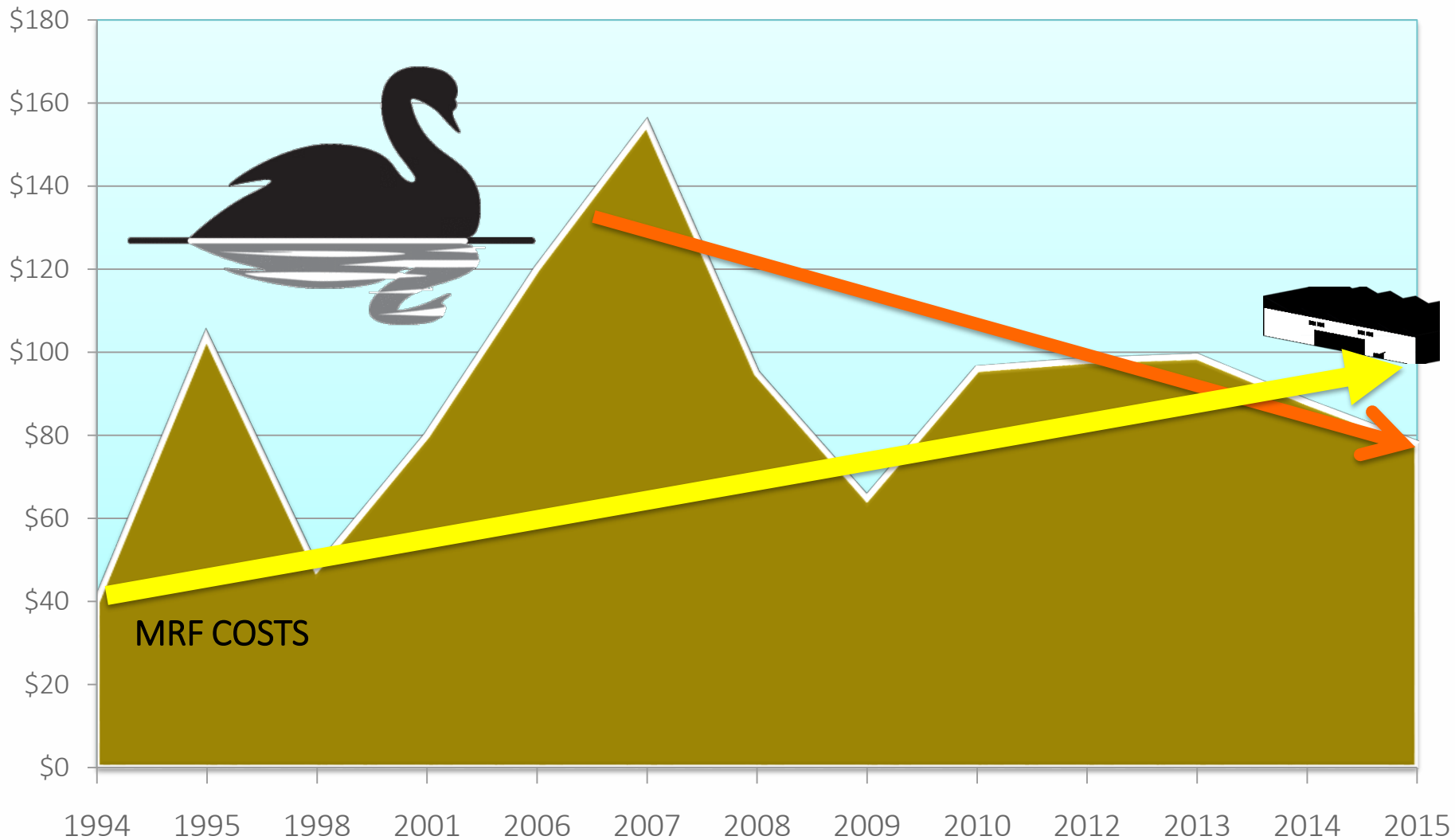
Bloomberg Commodities Index



Source: Wall Street Journal, U.S. Global Investors



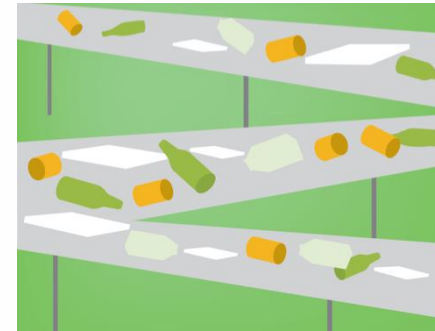
## AVERAGE COMMODITY RECYCLING REVENUE & IMPACT OF RISING COST (TONS PROCESSED) VS. NET ACR



# Single Stream System- Net Change in Costs



Category	2007	2015	Change
Revenue	\$125	\$77	-83%
Disposal	-\$3.92	-\$8	-102%
Collection	-\$140	-\$118	37%
MRF Processing	-\$59	-\$85	-48%
Subtotal	-\$203	-\$211	3.2%
Net Costs	-\$78	-\$144	80%

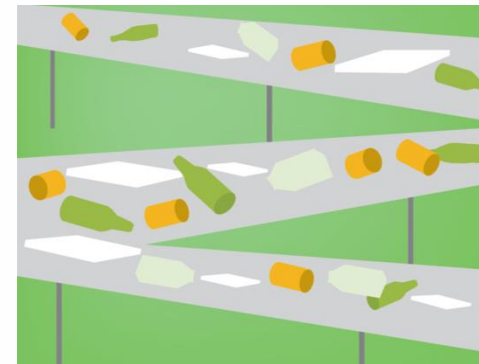




# Single Stream System- ~Costs vs. Landfills

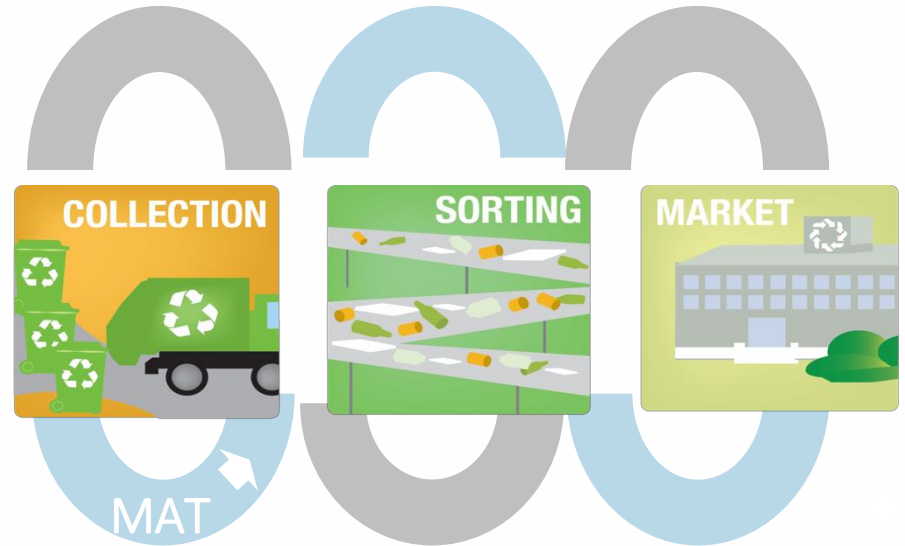


Category	2015	Landfill
Revenue	\$77	
Disposal	-\$8	-\$49
Collection	-\$118	-\$95
MRF Processing	-\$86	
Subtotal	-\$211	
Net Costs	-\$144	-\$145



# How Has the Processor reacted to these conditions?

- Cost cutting & continuous improvement in work processes
- Educating consumers to Reduce Contamination
- Shedding bad contracts or actively renegotiating where possible
- Consolidating and closing facilities
- Charging for services like MRF processing which used to be covered by commodities





Cities started to feel the pinch a few years ago and Processing Fees began to prevail for MRF services

Mid-summer, “.....2,000 municipalities are paying to dispose of their recyclables instead of the other way around” (at MRFs)

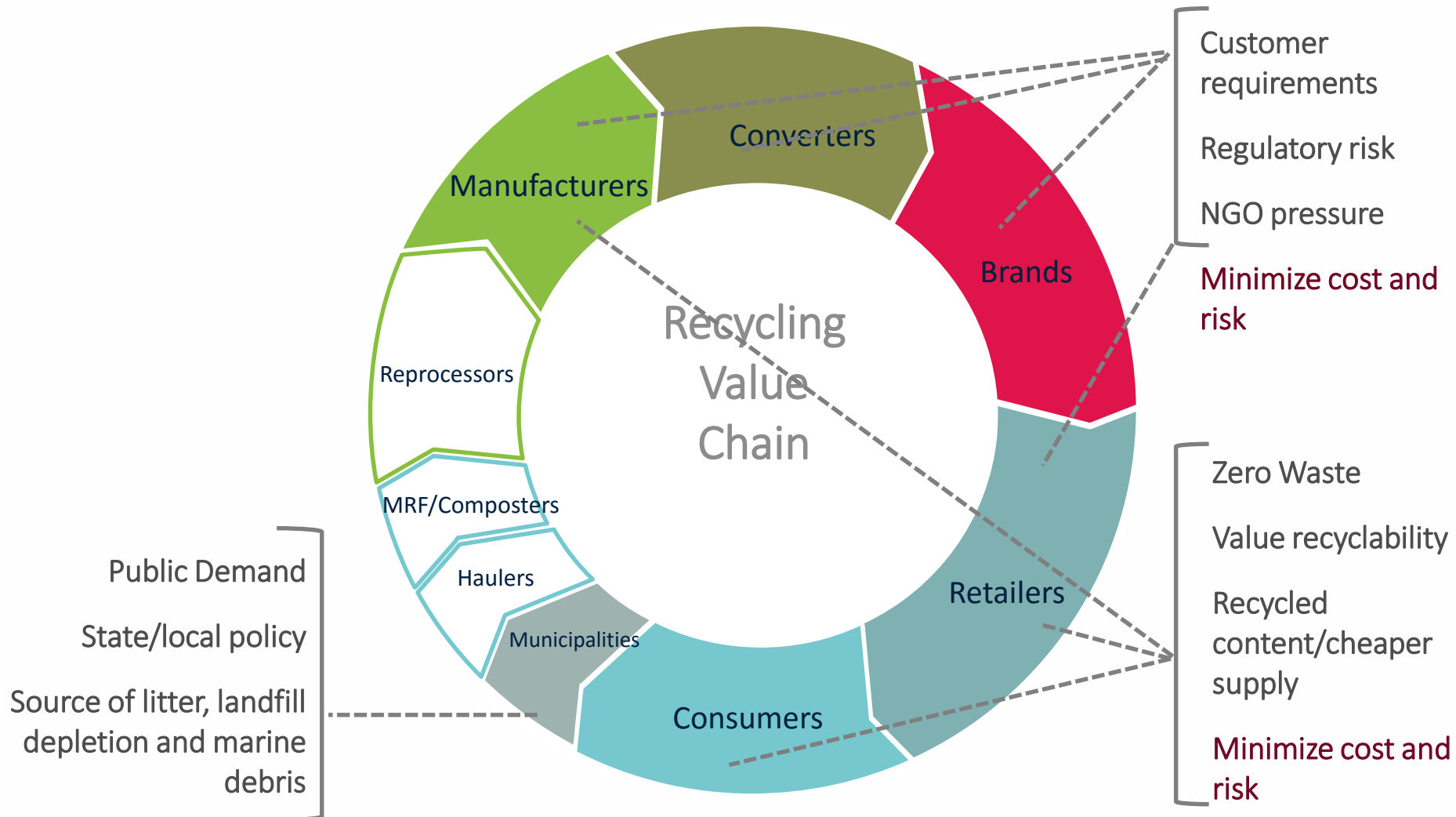
*The Washington Post*

## MRFs battered, industry continues to hunker down, barriers to entry grow for new materials:

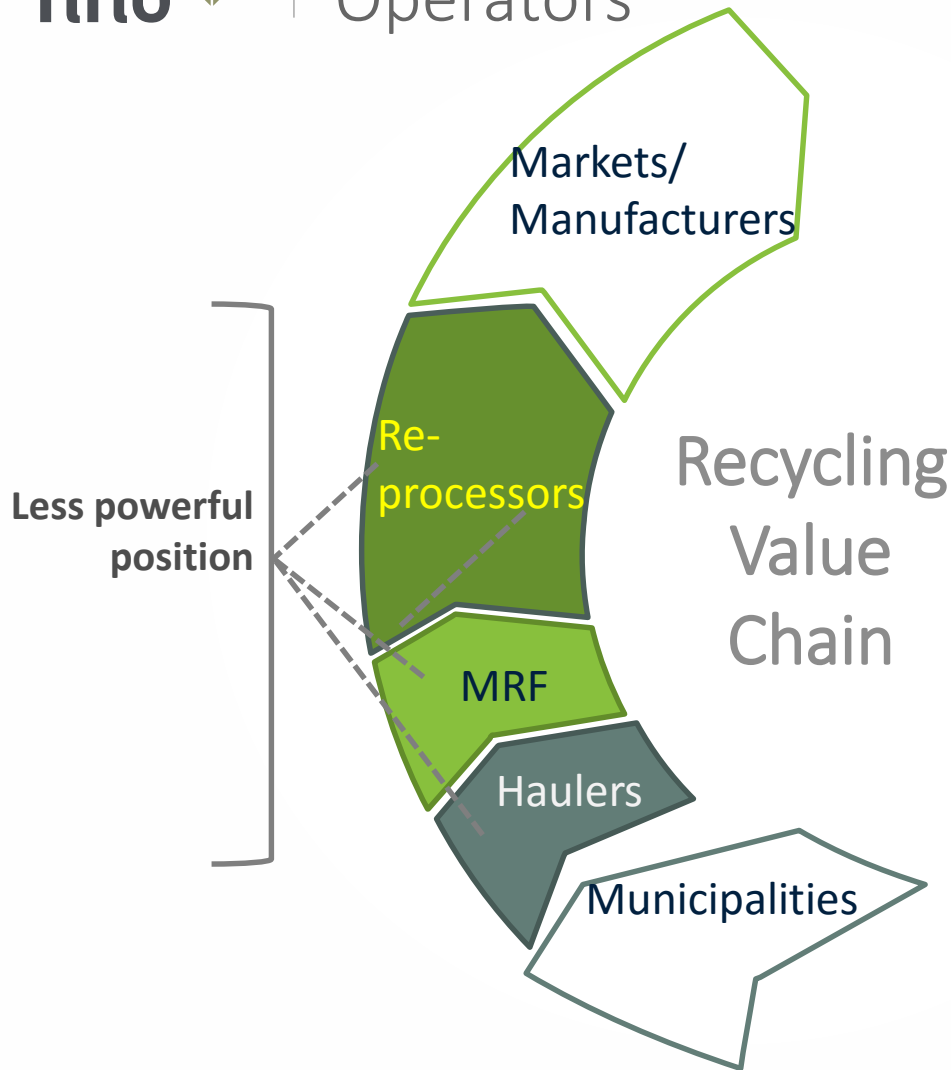


- Commodities are still an important offset but not counted on by MRF operators who expect to be paid to sort
- Financing banks no longer willing to take the risk, investment slows down
- Tip Fees are charged for sorting
- 15-20% of fleet closes in next 6 quarters
- MRFs fight back
  - Contracts enforced/not renewed
  - Types of materials taken optimized
- Higher costs make alternatives look more favorable

# Game Theory- Each entity in chain pushes risk elsewhere and maximizes position



# Game Theory and demands on the Operators



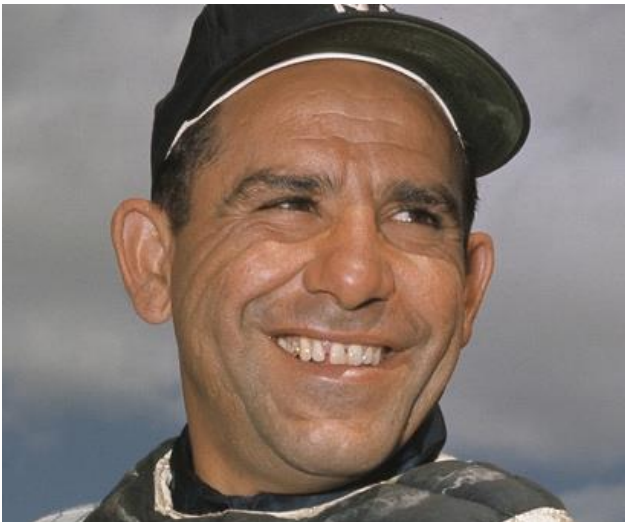
<i><b>Expectations</b></i>	<i><b>Realities</b></i>
Recycling should be free- processing paid by commodity	Inelastic Supply/Elastic Demand
Take more materials	More and tougher quality specs
Minimize my risk	Bulk of Market risk on recycling system
Accept Long-term contracts	Markets weaker for each additional material
React to dynamic material streams	Compete with LF
uninspected carted materials	Without enforcement residue rises

- New materials to be recovered will continue to be worth less than predecessor materials
- Recycling will grow and mrfs won't go away
- diversion costs will continue to rise
- Out of balance value stream of recycling needs other funding besides commodity value
- Market for recovery needs stimulation





Deeper, more convenient, and more complex recycling popularity is “pay for play” - it is the future



**“It’s deja vu all over again.”**  
“We made too many wrong mistakes.”  
**“It ain’t over till it’s over.”**