# Sustainable Recycling Programs: What it Means to the Recycling Industry

June 13, 2016

Stacy Katz, Manager, Materials Mgmt & Quality, Waste Management

# Recycling Services

88%

Increase in amount
of recyclables managed since 2007

30.5M

Tons of recyclables extracted from
the waste stream since 2012

100

Materials recovery facilities
owned/operated by
Waste Management
(12/2015)

WM has invested over $1 billion in recycling infrastructure

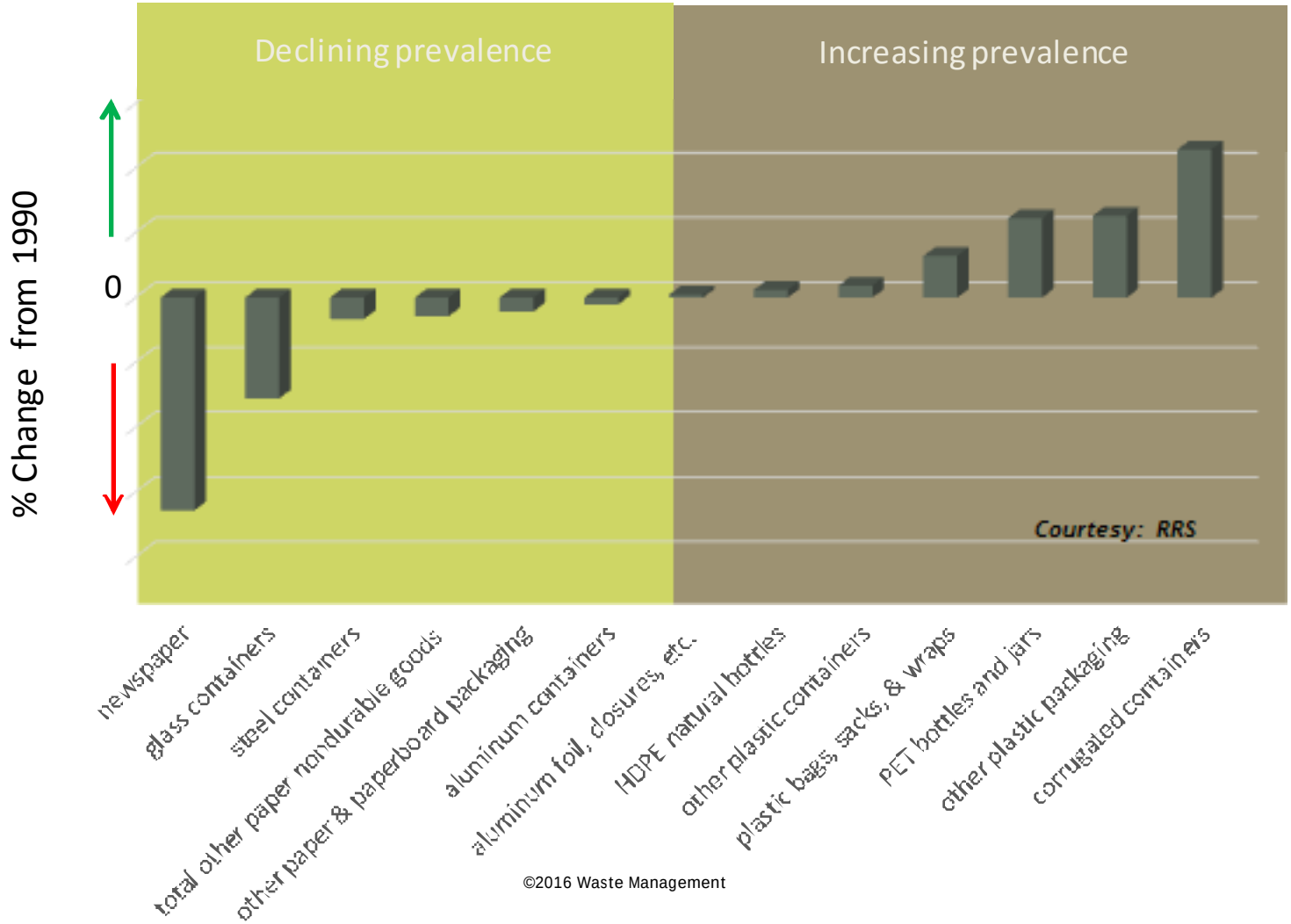
.

©2016 Waste Management

# The Evolving Ton

BIG CHANGES

# Change in Materials: 1990-2012




©2016 Waste Management

BIG CHANGES

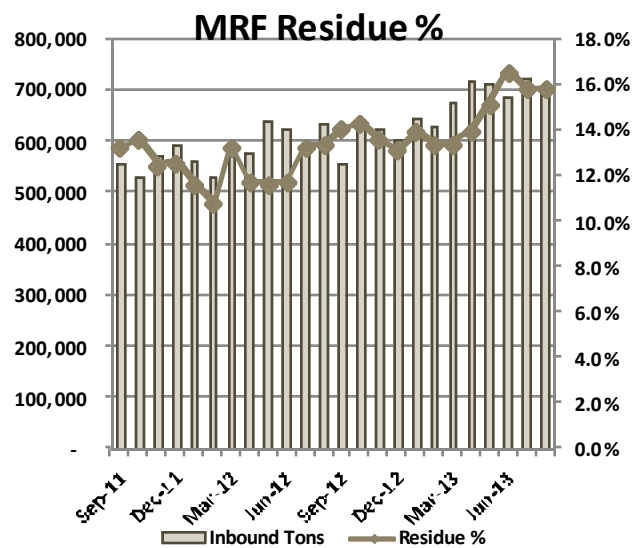
# Does more tons= more recycling?

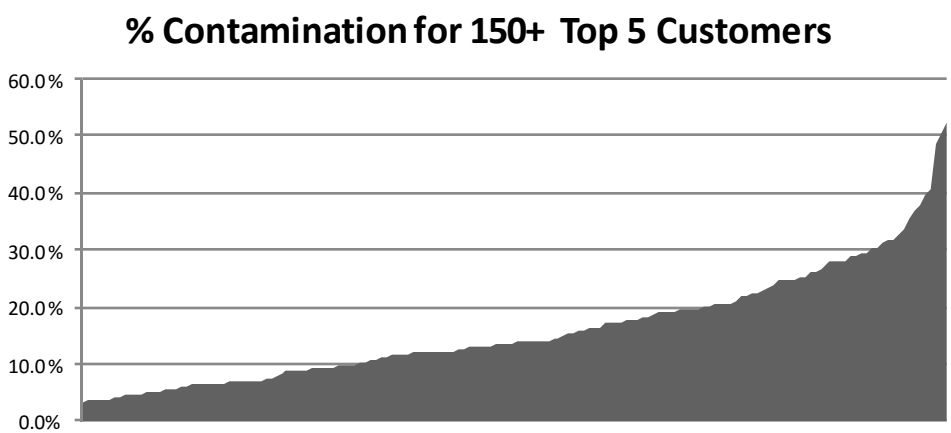
- Around 9,800 recycling programs in US
- Differ in materials collected, color of containers, type of collection,
- Diversity of communities; languages, background, education
- Recycling Rates and Diversion stats but very little information on composition information.
- Differences in frequency of communication; educational materials; Tight budgets, small staff, minimal enforcement and few structured enforcement programs
- Does larger and more recycling containers always = more recycling? What are the unintended consequences?

# Single Stream = Contamination

# Issue: Increasing Contamination

- Contamination on average 16%
- Contamination up to 50% in some cases
- Contamination reduces yield>demand
- Processing costs increase, up 20% in two years > driving up cost to customers



# Common Contaminants

| What? | Why? |
|---|---|
| Black Bags w/food waste, trash, recyclables | Can't tell what's in them have to discard |
| White Bags w/ food & bathroom waste, recyclables | Can't tell what's in them have to discard |
| Clear bags w/ food & bathroom waste, recyclables | Takes time on line to open, miss other hazards, discard |
| Tarps, kiddie pools, large plastic sheets | When remove from line, sweep all other recyclables |
| Flexible film packaging, plastic bags | Wrap around stars and contaminate paper |
| Wood, green waste, dirt, concrete, floor board | Can't remove from line, contaminates other products |
| Electronics, small appliances, car parts, propane tanks | Heavy, damage screens, explosions, fires |
| Textiles, bed spreads, sheets, shoes | Wrap around screens and/or get into paper |
| Hoses, wires, hangers, holiday lights, extension cords | Wrap around screens, sweep all other recyclables |
| Carpet | Heavy, when remove sweep all other recyclables |
| Paper plates, cups, tissue, paper towels, | Contaminate paper |
| Food and Liquids | Contaminate products |
| Diapers and Animal Waste | Contaminate products; health hazard |

# Contamination

Inbound Stream

Common Contaminants:

-Film,, bagged material (recyclables and trash)
-Textiles, Shoes, Blankets
-Small Appliances
-Food Waste, Yard Waste, Wood

# The Impact of Inbound Contamination

## Why is Contamination a Problem?

Increasing Demands on MRF Labor and Technology while Decreasing Equipment Performance

- More Sorters Required to Remove Contaminants throughout
- Contaminations Prevent Equipment from Performing Effectively
- Increases the Cost of Recycling

Increased Outbound Contamination

- MRFs designed to separate recyclables from recyclables
- MRFs cannot remove all contamination > gets into other products (i.e. paper, PET,)
- Reduces yield of outbound materials
- Reduces value of outbound materials

Reduced Market Opportunities

- Buyers Reject Loads; Reduce Price; Can't compete with virgin materials, Stop Buying Materials altogether Example – Green Fence

**Jeopardizing Viability of Recycling Long-Term and Reducing Opportunities for Greater Market Penetration and the**

# Impact of Contamination

Pre-Sort

- ✓ Sorters Remove Film and Other Contaminants
- ✓ Sorters are an Investment
- ✓ Sorters Could be Used to Extract Higher Value Commodities or to Improve Quality of Outbound Materials
- ✓ Investment in Bag Vacuum Technology to Capture Material
- ✓ Removed Material Has No Value

# Impact of Contamination

Equipment-Design vs. Processing/Separation State

- ✓ How Stars are Designed to Function
- ✓ Containers/Smaller Items Drop through Openings

- ✓ Shortly After Processing
- ✓ Pre-Sort Can't Remove Everything
- ✓ Contamination Wraps Around Stars
- ✓ Openings are Blocked
- ✓ Containers Can't Fall Down >Flows into Fiber

# Impact of Contamination

Equipment-Post- Processing

- ✓ Just Some of the Material Removed from the Stars
- ✓ Sorters/Staff Need to Remove this Material Regularly to Prevent Contamination

# Impact of Contamination

Outbound Products – Quality

- ✓ Ex. of Materials Removed from Final Product
- ✓ Contaminated Recyclables/Reduced Quality
- ✓ More Labor Required to Remove Contamination
- ✓ Risk of End Market Loss

# Sustainable Materials Management: Quality over Quantity

- The U.S recycling industry must rely on both domestic and overseas markets.
- Pricing and quality are critical to keep U.S. recovered materials competitive in the global market.
- We must all work to improve the overall quality of recyclables.
- MRFs are increasing their processing to reduce the amount of non-recyclable plastics and other contaminants
- There is a need for superior, customized public education programs, community involvement, and enforcement
- There is a need to ensure we Recycle Often but Recycle Right[R]
- There is a big push for diversion. But if more "diversion" results in worse and worse quality, it can jeopardize the long-term viability of the recycling industry.

# Call to Action:

- Need to understand what's happening in our recycling programs
- Need to proactively manage our recycling programs
- Need to ensure education is happening often and correctly
- Need to have enforcement
- Need to be a part in ensuring the viability of recycling.

# Thank you!

Stacy Katz
skatz@wm.com