The Economics of Recycling: A Collector/Processor Perspective

Susan Robinson
Waste Management

November 7, 2016
WM Recycling Services

- **14 M**: Million tons of recyclables managed in 2015
- **2,200**: Collection contracts with recycling service to 7.5 M households
- **104**: Materials recovery facilities owned/operated by Waste Management. 200 muni processing contracts, 6000+MRF contracts

**WM** has invested over **$1 billion** in recycling infrastructure.
WM MRF locations: 104 MRFs in September 2016
Closed/Exited since 2014
All MRFs – 2016 (104)
Changing economics of recycling

Commodity Markets
- Reduced global market demand
- More stringent quality requirements

Evolving Inputs & Systems
- Packaging material much more complex
- Increase in number of cart-based single stream recycling systems
Current rates are comprised of:

1. Cost to collect
2. Cost to process/dispose
3. Fees

Disposal cost is between 21-33% of rate depending on jurisdiction

Collections is 60-70% of integrated costs
The Role of Goals

• Weight-based recycling has been our measure of material management performance
• States, cities and corporations have developed 50%, 75% and even Zero-Waste goals
• Cities added more materials and convenient programs to help achieve their goals.

Goals drive programs.
Do we have the right goals?
In some U.S. communities, we see up to 50% contamination, by weight, in materials collected for recycling.

On average, contamination makes up about 16% of collected recycling, by weight.

Processing costs have increased due to more stringent quality standards, resulting in higher customer costs.

Contamination costs WM $60 Million per year.
Composition of Materials Entering Single Stream MRFs

- Glass 18%
- Mixed Paper 12%
- Contaminants 16%
- Plastics 6%
- Steel 2%
- Aluminum 1%
- Newsprint 25%
- Cardboard 20%

- 18% of inbound recyclables are glass and 16% are contaminants
- 34% of MRF inbound materials have a net cost **not** revenue.
Taking it to the streets: Cleaning up the stream

Siler City, NC - 40% contamination
• Provided basic public education
• Drivers tagged contaminated carts, then left behind
• Supported with Facebook ads
• Results were 20% decrease in contamination

Elgin, IL - 40% contamination
• Focused on reducing bagged garbage and food waste
• Targeted mailings first to educate
• 6 weeks of tagging
• 15% reduction in target contaminants

Key Take Aways - Expensive but effective
• Provide **real-time feedback** to customers
• Effective education happens **at the cart, point of collection**
• Need the **right tools in place** to execute (cameras, methods to record the data, driver training, etc.)
Wrap up - ongoing trends

• Factors beyond our control are likely to drive up the cost of recycling - The changing waste stream, soft global commodity markets and rising business costs.

• Push to improve inbound quality - Industry-wide efforts are focused on improving the quality of material being delivered to MRFs. On-route education is the best way to do this in extreme cases, but is expensive.

• Contract terms - The business model for the recycling industry must continue to evolve, recognizing the importance of reduced risk, accommodating commodity prices and measuring inbound quality in contracts.

Balancing MRF demands with collection cost will drive efforts to improve efficiency and recycling quality.