A Moving Target

Practical Implications of Packaging Design on MRF Operations

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A material is recyclable IF:

- The material can be collected, AND
- Can be received at a Material Recovery Facility for sorting, AND
- In the quantity desired, AND
- In the quality required, AND
- When there is a customer who wants the material PROVIDED THAT
- The sorted materials can be transported to the customer.
The State of the MRF

- Materials Recovery (Recycling) Facility—MRF
- No new dual-stream MRFs built since at least 2000
- Equipment and physical plant investments run in the millions of dollars due to high use of automation and technology
  - Requires significant throughput (TPH) to justify investment
  - Lightweighting means higher volume needed to meet higher TPH
  - Higher TPH means larger physical plant
- Commodities market is global, not regional
- Packaging SOP sorts for the Big Five:
  - PET, HDPE-Nat, HDPE-Col, UBC, Glass (although, this may change)
We *LOVE* Packaging! (mostly)
Moving Targets

- What’s the Next Big Thing?
- When is the Next Big Thing coming?
- They want us to sort WHAT?
- Who thought THAT would work?
- I can’t sell that....
- Why weren’t we asked?
- When will we be done?
What are we supposed to do with these?
Too Many Cooks?

Intersections between Policy decisions and Design decisions

- State and Local Policy Decisions
  - EPR/Product Stewardship: hope that policy mandates will lead to design for the environment
  - No national standard for what constitutes mandatory recyclables
  - Diversion mandates (not universal)
  - Landfill bans (not universal)

- Design Decisions
  - Corporate goals to meet
Missing from the Discussions-the MRFs

- Sorting technologies and capabilities
- Implications at the local level regarding public education
- Market forces
- Regional differences in recycling capability and access
- Definition of “Recyclable”
  - “Forget the numbers and the triangle”
Policy Directions

- Sustainable Materials Management
- EPR/Product Stewardship
- Regulatory Reform
- Economic Development
- Public-Private Partnerships
- Responsible Use of Taxpayer Dollars
Packaging Pressures

Must Haves:

- Preserve and protect the product contained by the packaging
- Brand identity
- Maintain/grow market share
- Reduce material and transportation costs
- Maximize profit
Packaging Pressures

Would be nice:

- Reduce carbon footprint
- Be able to legitimately claim universal recyclability for most packaging
- End responsibility for packaging improvements at internal manufacturing and distribution footprint
- Not have to worry about “cradle to cradle”
MRF Pressures

- Some packaging can throw off standard sorting equipment
  - False positives
  - False negatives
- Ends up in the residue
  - Loss of sales revenue
  - Increased processing costs
  - Reduced plant efficiency
  - Increased disposal costs
  - Negative impact on mandated diversion goals
Decision Points-CSWD

- Compliance with state and local laws
- Adherence to CSWD’s Mission, Vision, and Goals
- Providing value to the District’s taxpayers
- Allowing waste generators in the District to do their part
  - People who want to recycle, want to recycle everything they can
- Maintain consistent high-quality service
- Maintain consistent (infrequently changing) messaging
- Provide necessary infrastructure with sensitivity to taxpayer burdens and tolerances
- How frequently will we need to change equipment/markets to keep up with changes in packaging design?
Dollars and Sense

- Need to have confidence in the consistency of the material mix
- How much investment is too much?
- What’s a “good” number per capita? Per ton?
  - If bonding the investment, know your per capita number
  - If paying cash, know the per ton number
- When making a major new investment, need to keep capital replacement costs in the ROI equation.
  - Lifespan of newer equipment
  - Computer based, regular software updates
- Frequently changing equipment/software/markets to keep up with changes in packaging design will erode ROI.
- At what point does the ROI not work?
CSWD’s Sweet Spot

- Material Volume & Quality Consistency
- Appropriate Sorting Equipment & Technology
- Transportation to Markets
- Practical Policy Guidance from State, Local, Industry authorities
- Public Support for continual improvement
- Packaging Industry involvement in sorting technology improvement
What can be done?

- Make Design for the Environment the goal of every packaging decision.
- Encourage packaging designers to work more closely with MRF operators to test new packaging ideas with sorting capabilities of existing MRF equipment.
- Encourage Consumer Goods Companies to work more closely with sorting technology developers and manufacturers to understand MRF equipment limitations.
- Use recycled content material in new packaging whenever feasible, and continue with R&D to increase the likelihood of feasibility.
- On all packaging, immediately implement new labeling protocols that advise consumers to check with their local recycling authorities regarding a material’s recyclability in their hometown.
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