Recycling’s Rocky Road

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What Makes Something Recyclable?

All of these are necessary for sustainable recycling:

- Convenience
- Size/shape
- Public education

Collection

- Identification
- Sorting
- Size

Processing

- Demand
- Volume
- Value

End-Market

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Transition to Single Stream Collection and MRFs

Courtesy Nat Egosi, RRT

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Growth in Single Stream MRFs

What does this shift in Collection mean for the industry?

• 40% increase in volume when municipalities utilize a cart system
• Collection efficiencies are gained with automation and less workman’s comp claims
• Introduction of “Wishful Recyclers”, confusion, and unintended consequences
  • Leading to
    - More non-recyclable waste
    - More contamination
    - Higher Processing Cost
Collection

Processing

End Markets
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.

In some U.S. communities, we see up to 50% contamination, by weight, in materials collected for recycling.

Contamination costs WM $60 Million per year.

Contamination costs over $150 + per ton.

Processing costs are increasing in order to meet more stringent quality standards, resulting in higher customer costs.
Film Plastics in Disc Screens
MRF Economics - Increasing Costs

Composition of Materials Entering Single Stream MRFs

- 18% of inbound recyclables are glass and 16% are contaminants
- 34% of MRF inbound materials have a net cost not revenue.

Benefits of reducing contamination by 10% outweigh the cost of glass
Per Household Contamination Levels: Residential Recycling Bin (2005-2015)

Increase of 60 pounds/household Between 2005 and 2015
What’s in the Contamination?

- Recyclables: 64.75%
- Contamination: 35.25%
- Food Waste: 1.45%
- Liquids: 1.21%
- Textiles: 3.68%
- Unacceptable Plastics: 3.41%
- Film: 2.97%
- Refuse in bags: 8.46%
- Wood and yard waste: 3.20%
- All Other: 10.81%
- Scrap Metal, Including Hangers and full aerosol: 0.04%
- Hose, VCR Tapes, Other Tangles: 0.02%
- All Other: 10.81%
Immediate customer feedback

Contamination cart hanger

Your recycling has garbage in it.

Hay basura en su reciclaje.

We found one or more of the following items:

- Recyclables bagged in plastic bags
- Artículos reciclables en bolsas de plástico
- Loose plastic bags
- Bolsas de plástico sueltas
- Dirty items (e.g., food or liquids left in your recycling)
- Artículos manchados y/o sucios (no deje alimentos o líquidos en sus contenedores)
- Non-recyclable items (or damaged items)
- Artículos no reciclables (como muebles dañados o daños en tapones de gas propano)
- Other

When in doubt, leave it out.
Si tiene alguna duda, déjelo fuera.

Your Waste Management Driver: Símbolo de la Dirección de Reciclaje

If you have any questions, please call 1-877-317-0214.
Si tiene alguna pregunta, por favor llame al 1-877-317-0214.

THINK GREEN.

Positive re-enforcement cart hanger

Thanks for doing a great job recycling!
¡Gracias por hacer un excelente trabajo con el reciclaje!

Your recycling looks great and your actions are going a long way towards turning all of our waste into a resource for a brighter, more sustainable future.

Su reciclaje se ve excelente y sus acciones ayudan a convertir todos estos desechos en recursos para un futuro más brillante y sostenible.

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THINK GREEN.
What does this shift in Processing mean for the industry?

- Contamination
  - Higher cost of contaminant disposal
  - Less Efficient Operations with contaminant related downtime
  - Greater Wear on Equipment

- Low Value Materials
  - Unrecyclable Packaging, adds cost of removal
  - Film Plastic & Bags
  - Glass

These two changes to the waste stream add cost and they warrant further investment to deal with the ever changing waste stream (screens, 3D Separation, Ballistic (weight based) Separation
Collection

Processing

End Markets
Price and Volume

Price and volume drive recycling investments

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What do the changes in materials and markets mean for recycling?

A Sustainable Recycling Infrastructure requires ongoing investment. In order for investment to occur, recycling must be profitable. For that reason we are focused on three key areas of continuous improvement:

- **Operational improvement** - Improving MRF operating efficiencies
- **Improving inbound quality** - Industry-wide efforts are focused on improving the quality of material being delivered to MRFs, which will help reduce the cost of recycling. Leave the value in the municipal stream.
- **Contract terms** - The business model for the recycling industry has evolved, recognizing the importance of reduced risk, accommodating commodity prices and measuring inbound quality.
How can MRFs and our customers partner to fix the recycling model?

• Educate with a focus on what is recyclable and what isn’t
• Enforce compliance (80:20 Rule)
• Consider both the economic and environmental benefit of the materials we wish to include in our programs
• Don’t let weight get in the way. A lighter recycling stream makes it harder to increase recycling rates
  - More light-weight plastic
  - More lower value materials
  - Light-weighting of all packaging

Consider changing the Goal (CE & SMM)
Sustainable recycling requires broad, multi-stakeholder support

Local recycling goals must be realistic. Policies and contract terms must support these goals.

Local regulations and our recycling contracts must be aligned to ensure the development of economically sustainable recycling programs.

Sustainable recycling must include public education and outreach to support local regulations and economic realities.
Back to the Basics: Public Education and Outreach for Recycling

Recycle Often. Recycle Right.℠

The Path to Sustainable Profitable Recycling
Recycle Often. Recycle Right.™

Getting Back to the Basics of Recycling

• Built on behavior change science framework:
  ▪ Keep it simple
  ▪ Focus on barriers and benefits
  ▪ Tell people why
  ▪ Ask for a commitment
  ▪ Measure and scale

• Focus on specific changes that are (almost) universal; can translate on a national level

• Focus on basic materials with large recycling potential: paper, bottles and cans

• Address contamination issues that cause the most issues at MRFs: Wet items and plastic bags

• Help lead industry towards improved recycling
Simple Messages

1. Recycle all my empty bottles, cans and paper.
2. Keep food and liquids out of my recycling.

Simplifying the Message

- Focus on 3 simple behaviors that could greatly impact recycling nationally
- Tested
- Accompanying myth busters/FAQs for those that want to dig deeper
Recycle Often...
...because it’s the responsible thing to do

- Recycle empty plastic bottles and metal/aluminum cans (glass*)
- Recycle clean, dry paper and cardboard
Recycle Right...
...because following a few simple rules will make the process work

- Keep plastic bags out of your recycling container
- Keep food, food-soiled paper, and liquids out of your recycling container
You Have the Power!

Ever wonder, “Why and how to recycle?” Every day we encounter hundreds of recyclable items. By recycling properly, you help materials get to their next best use, which in turn saves tons upon tons of raw materials, time, energy and expense.

It’s Time to Rethink Recycling

69% of plastic bottles don’t get recycled. 45% of aluminum cans end up in the garbage. Liquids often spoil a whole load of otherwise recyclable paper. That’s why it’s time to get back to the basics of good recycling. The fact is that some recycling actions make a bigger impact than others. These Recycling Rules will help you rethink recycling to make a sustainable impact!

Become a Recycling Ambassador. Whether you’re a home owner, teacher, city official, business, kid, or a recycling enthusiast, all the information you need to help pass it on is just a few clicks away.

Participation is Key!

1. Recycle all bottles, cans and paper
2. Keep items clean and dry
3. No plastic bags

Certain offenders can slow down the recycling process or even ruin the load.

Always recycle:
- Plastic Bottles & Containers
- Food & Beverage Cans
- Paper
- Flattened Cardboard & Paperboard
- Food & Beverage Cartons

Do NOT include in your recycling cart:
- NO Food Waste
- NO Plastic Bags & Film
- NO Foam Cups & Containers
- NO Needles

*Source: US Environmental Protection Agency

To Learn More Visit: [website-xxxxx.com]
Realize the value of recycling. Here’s how.

Always recycle:
- Plastic Bottles & Containers
- Food & Beverage Cans
- Paper
- Flattened Cardboard & Paperboard
- Food & Beverage Cartons

Do NOT include in your mixed recycling cart:
- NO Food Waste (Compost instead!)
- NO Plastic Bags & Film (Find a recycling site at plasticfilmrecycling.org)
- NO Foam Cups & Containers (Check Earth911.org for options.)
- NO Needles (Keep medical waste out of recycling. Place in safe disposal containers.)

Questions?
[Contact Customer Service: 000 000 0000
email@xxxxx.com]

To Learn More Visit: [website-xxxxx.com]

Please consult your local municipality for their acceptable materials and additional details of local programs, which may differ slightly.
Tell People Why

69% of plastic bottles don’t get recycled.

45% of aluminum cans end up in the garbage.

Soggy items can spoil a whole load of recycling.

Loose plastic bags can shut down an entire recycling plant.
**MYTH:** All plastics can be recycled.

**ANSWER:** False

Not all plastics can be successfully recycled. At this time, only some plastics can be made into new things. Recycle plastics by shape: bottles, jars, jugs and tubs.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ANSWER</th>
<th>MORE INFO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamshell Packaging</td>
<td>No</td>
<td>The plastic “to go” containers or containers holding berries, apples, bakery items, etc., are not consistently made of high-value plastic, are difficult to recycle and are usually contaminated with food when disposed. See more at: <a href="http://oregonstate.edu/sustainability/blog/2014/01/recycling-mythbusters-plastic-recyclables">http://oregonstate.edu/sustainability/blog/2014/01/recycling-mythbusters-plastic-recyclables</a></td>
</tr>
<tr>
<td>Plastic eatery: utensils, plates and cups</td>
<td>No</td>
<td>Plastic straws, utensils, including “compostable” utensils, plastic plates and plastic cups come in such a wide variety of non-usable, low-grade plastics that it is impossible to identify and separate the recyclables from the non-recyclable look-alikes (same as the clamshells). Fast food packaging, like utensils, are complicated and are not readily recovered through modern Material Recovery Facilities (MRFs), or by secondary processors who buy MRF bales.</td>
</tr>
<tr>
<td>Chip bags, nutritional bar or candy wrappers</td>
<td>No</td>
<td>There is no real end market for this, often hybrid material. In fact, there are only a few niche markets for it. Please consult your local municipality to discover any specialty recycling opportunities.</td>
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Resources

- [www.RecycleOftenRecycleRight.com](http://www.RecycleOftenRecycleRight.com)
  Users can access the campaign online and make a digital promise to rethink recycling by “getting back to the basics of good recycling” and encourage others to do the same.

- EPA, KAB, SWANA and NW&RA collaborated to create: [http://beginwiththebin.org/recycling/recycling-smart](http://beginwiththebin.org/recycling/recycling-smart)

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Questions?

Thank you.