Plastic Sorting Best Management Practices: 
*Resources for MRFs, Municipalities, & Reclaimers*

September 25, 2018
2018 APR Webinar Series

EU and CA Packaging Regulations: What do They Mean for Plastics Recycling?

APR Sorting Potential Protocols

APR Recycling Demand Champion Campaign

SMM: A Compliment or a Barrier to Recycling? * RESCHEDULED

Life Cycle Inventory Analysis

Plastic Sorting Best Management Practices
Presentation slides and recording will be posted on the APR Website.
Today’s Presenters

Kara Pochiro
APR VP of Communications & Public Affairs

Liz Bedard
APR Director of APR Olefins /Rigid Plastics Recycling Program

Stacey Demers
Project Director at SCS Engineers

Tonya Randell
Program Manager at More Recycling Associates
Today’s Session...

Brief Overview of APR
APR’s Perspective & Intro to BMPs
A Consultant’s Perspective & How BMPs Benefit Cities, States
Industry Expert’s Perspective & Demonstration of BMPs
Questions
Who is APR?

- International trade association
- The Voice of Plastics Recycling®
- Companies committed to the success of plastics recycling
Increase Supply
Enhance Quality
Expand Demand
Communicate Value

APR Primary Goals
APR Best Management Practices for Plastic Sorting

Liz Bedard, Director
APR Olefins/Rigids Program

The Association of Plastic Recyclers
Plastics come in many different resins and forms.

Optimizing plastic recycling requires understanding –

What plastic material is in the recycling stream?
APR Best Management Practices for Plastic Sorting

The Issue

Municipalities and states regularly sort wastes/plastics to understand their streams.

However, there are no plastic sorting standards.

Without plastic sorting standards, valuable waste sorts can not provide:

• Consistent data
• Comparative data
• Understanding of trends
APR Best Management Practices for Plastic Sorting

The Solution

APR Best Management Practices for Plastic Sorting

Developed by:

• Association of Plastic Recyclers
• More Recycling
• Key Waste Composition Consultants

Support from American Chemistry Council
APR Best Management Practices for Plastic Sorting

The result of detailed research and industry review.

Taking into consideration varied aspects of waste/plastic sorts, such as:

- Budget
- A community’s specific recyclables list
- Anticipated waste stream and,
- Item considered problematic
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What are the BMPs?

Three plastic sorting levels & five major categories.

Plastic Sort Levels
1. Sorting Level #1
2. Sorting Level #2
3. Sorting Level #3

Major Categories
1. #1 and #2 Bottles/Jars
2. #3-7 Bottles & Small Rrigids
3. Bulky Rrigids
4. Film & Flexibles
5. Other Plastic
APR Best Management Practices for Plastic Sorting

• Sorting Level #3’s twenty nine sorts which can be contracted into….

• Sorting Level #2’s seventeen sorts which can be contracted into…..

• Sorting Level #1’s eight sorts.

All sorting categories are based on “Marketable Bales”.
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Sorting Level 1
8 Sorts

(Based on Marketable Bales)

#1 PET & #2 HDPE Bottles/Jars
3 Sorts

#3-7 Bottles & Small Rigid Plastics (<2 gals., >2”)
1 Sort

Bulky Rigid Plastics (> 2 gals.)
1 Sort

Film & Flexible
2 Sorts

Other Plastics
1 Sort
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Sorting Level 2
17 SORTS

- #1 PET & #2 HDPE Bottles/Jars
  3 Sorts

- #3-7 Bottles & Small Rigid Plastics (<2 gals., >2"
  8 Sorts

- Bulky Rigid Plastics (> 2 gals.)
  1 Sort

- Film & Flexible
  3 Sorts

- Other Plastics
  2 Sorts
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Sorting Level 3
29 SORTS

- #1 PET & #2 HDPE Bottles/Jars
  - 3 Sorts
- #3-7 Bottles & Small Rigid Plastics
  - <2 gals., >2"
  - 18 Sorts
- Bulky Rigid Plastics
  - > 2 gals.
  - 1 Sort
- Film & Flexible
  - 4 Sorts
- Other Plastics
  - 3 Sorts
## APR Best Management Practices for Plastic Sorting

<table>
<thead>
<tr>
<th>Item</th>
<th>Sorting Level #1</th>
<th>Sorting Level #2</th>
<th>Sorting Level #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 &amp; #2 Bottles/Jars</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>#3-7 Bottles &amp; Small Rigids</td>
<td>1</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>Bulky Rigids</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Film &amp; Flexibles</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Other Plastics</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8 Sorts</strong></td>
<td><strong>17 Sorts</strong></td>
<td><strong>29 Sorts</strong></td>
</tr>
</tbody>
</table>
APR Best Management Practices for Plastic Sorting

How Industry will use Data?

- Standardized categories enable plastic reclaimers to:
  - Improve recovery approaches
  - Understand volumes available
  - See trends in the industry
  - Anticipate needed capital investments
What Are We Wasting?
Using Waste Characterization Data for Program Planning and Design
Why Do A Waste Characterization Study?

• Gauge Program Success
• Assess Diversion Opportunities
• Calculate Environmental Benefits
• Estimate Potential Revenue and Jobs
• Identify Disposal Trends
• Target Materials and Generators
• Assist in Facility Design
• Evaluate Energy Value
What Materials are in This Pile?

Material Types usually dictated by Client, and based on:

1. Previous Studies
2. What MRF Accepts
3. Recycling Programs of other jurisdictions
4. Curiosity
Typical Load Sampling
Sample Sorting

Waste Sorting Happens:

1. Quickly – sort about 2000 pounds per day
2. Larger, Easily-Identifiable Items First
3. Unidentifiable Items go in Other Category
4. Plastics always most difficult material
Some Plastic Material Types

PET Bottles (#1)        HDPE Natural (#2)
                      Bottles & Jars
Some Plastic Material Types

Polystyrene (#6)

Styrofoam
Expanded Polystyrene (#6)
Some Plastic Material Types

Single-Use Shopping Bags

HDPE Colored (#2) Bottles & Jars
Consistent Material Definitions Allow Comparisons

The Changing Waste Stream
Although Material Types Can Be Added

YEAR = 2014

- PET Containers
- PET Bottles
- #3-#7 Containers
- Durable Plastic Items
- Other Plastic
- Non-Recyclable Film
- Recyclable Plastic Film

- PAPER
- PLASTIC
- OTHER
- GLASS
- METAL
- ORGANIC
Before a Waste Characterization Study…

1. How Will the Information & Data be Used
   a) Education and Outreach
   b) Evaluation of Existing Programs


3. Plan Early for Comparisons
   a) Prior Studies
   b) Other Jurisdictions and Statewide

4. Use APR Guidance for Consistency

Stacey Demers, Project Director
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Good Waste Sort Data Matters

Tonya Randell
September 25, 2018
APR webinar
Why Waste Sort Data is Important
Good Standards = Clear, Usable Data

• There is a loss of clarity when we diverge from standards.
• For example, PET Bottle bales usually contain PET jars.
  – But if you sort only bottles and put the PET jars into a different category, PET hasn’t been sorted in a way that can easily combined to track to the marketable commodity.
  – It’s hard to aggregate data about what is or isn’t being collected, marketed, and reclaimed.
• Standard waste sort categories support existing efforts to use standard terms for both outreach and commodity discussions.
Plastic Recycling Terms and Tools

**Goal:** Increase the quality and quantity of plastics collected and to facilitate better tracking.

**Terms & Tools**

Recycle More Plastics in Your Community

Increase the amounts and types of plastics recycled in your community. The Plastics Recycling Terms & Tools can help.

What are the Terms & Tools?

This site helps community recycling programs more effectively educate their residents about which plastics to recycle. Our Outreach Builder tool lets you choose common plastics recycling terms that best fit your program, then download free images for your outreach materials or build a custom flyer that shows what can and can't be recycled in your community. Use these terms and watch your plastics recycling quantity and quality grow.

Start the Outreach Builder
Outreach Terms

Clear, Concise & Common terminology and simple tools for community recycling programs to help communicate more effectively to residents.
Commodity Terms

Use APR bale specs to help streamline communications about buying and selling plastics that have been collected in the plastics value chain.
Annual Plastic Survey Data

More Recycling collects data to see what plastics are being recycled in the US and Canada. We provide data or write reports on these 4 distinct categories.

~ 6 Billion Lbs in 2016

PET: 31%
HDPE: 25%
Non-Bottle Rigid: 24%
Film: 20%
Granular Data Drives Industry

Because Non-Bottle Rigids make up a quarter of the total plastic we track, it’s important to break out to other categories to see trends by resin.
Consistent Data Leads to Trends

Using the same data categories across the country and year over year allows industry to track trends over time.
Waste BMPs and Data Collection
Good National Data Starts Here
Level 3 details
Sample Sort for Specific Items: Pouches and PS Foam

If you only wanted to focus on Pouches and Foam, you could do specific sorts of Film & Flexibles and Other Plastics, without needing to do the sub-sorts for 3-7 & Smalls.

We believe everyone would continue to pull out HDPE and PET bottles because of the role they play in most plastic recycling programs.
Conclusion

• These BMPs help us with better comparisons;
• Which help us draw conclusions on where we are, compare to where we were, and provide direction about where we should go with plastic recycling.
• And they work in tandem with other industry efforts from education through the value chain to reclamation and conversion.
Questions?

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