Recycling Rigid Plastics
Beyond Bottles:
Residential Bulky Rigids

August 1, 2017
Today’s Presenters

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APR Communications
Director

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Director of Market Development,
KW Plastics Recycling

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Director of Rigid Plastics Recycling, APR

Samantha MacBride
Director of Research, DSNY
Today’s Session

• Introduction to APR’s Bulky Rigid Toolkit
• Curbside Collection
• Drop-Off and Special Event Collection
• MRF Information and Marketing Resources
• Processing and Applications
• Questions
Who is APR?

International trade association

The Voice of Plastics Recycling®

Companies committed to the success of plastics recycling
APR Primary Goals

Increase Supply
Enhance Quality
Communicate Value

Increase the Value Proposition of Recycled Plastics
Recycling Rigid Plastics Beyond Bottles: RESIDENTIAL BULKY

Marketable Material, Growing Demand
Why Does APR Support Residential Bulky Rigid Plastic Recycling?

Recyclable and Marketable

More plastic recycled, less plastic in landfills and oceans.
Case Studies

• Oneida-Herkimer, New York
• Shakopee, Minnesota
• Denver, Colorado
Types of Collection

- Curbside
- Drop-Off
- Special Event
Bulky Rigid Plastics and Residential Recycling In NYC

Samantha MacBride.
NYC Department of Sanitation
August 1, 2017
The Three Stages of Urban Discards Management

- generation
- collection
- processing and marketing
New Yorkers do want to move along bulky rigids!
An estimated 32,000 tons per year are discarded.

Bulky Rigs are 0.9% of All Residential Discards

- Bulk/Rigid Plastic: Crates/Soda Bottle Carriers: 4%
- Bulk/Rigid Plastic: Other Durable: 21%
- Bulk/Rigid Plastic: Toys/Housewares: 75%

generation
For reasons I will explain we don’t know how much of that is currently going to recycling

27,000 in refuse?

8500 in MGP?
## 2013 Waste Characterization Study: Resin Subsort

### Plastic Item Types
- Plastic Bottles
- #1 PET Thermoforms
- Tubs/Lids Excluding #6 Polystyrene
- #6 Rigid Polystyrene Containers/Packaging
- Other Rigid Containers/Packaging
- Single Use Plastic Plates/Cups/Cutlery
- Bulk/Rigid Plastic: Crates/Soda Bottle Carriers
- Bulk/Rigid Plastic: Toys/Housewares
- Bulk/Rigid Plastic: Other Durable Appliances: Plastic
- Other PVC
- Other Plastics
- #6 EPS Containers/Packaging

### Resin Types
- #1 PET *
- #2 HDPE Natural
- #2 HDPE Pigmented
- #3 PVC
- #4 LDPE/LLDPE
- #5 PP Rigid
- #5 PP Expanded
- #6 PS Rigid
- #6 PS Expanded
- #7 Other
- Dual Numbered
- Other Labeled Resin
- BioPlastic
- Unlabeled Resin

### Plastic Item Types
- Film Plastic: Retail Bags and Sleeves
- Film Plastic: Garbage Bags
- Film Plastic: Food/Drink Pouches
- Film Plastic: Other

### Resin Types
- Polyethylene Film (HD/LD/LLD)
- Non-PE Film

* Bottles sorted into #1 PET "clear/green" and "other color"

**135 possible sorts / 82 with values**
Most Bulky Rigids Bear No RIC Symbol

- Unlabeled Resin: 0.70%
- Other Labeled Resin: 0.00%
- Dual Numbered: 0.00%
- BioPlastic: 0.00%
- #7 Other: 0.00%
- #6 PS Rigid: 0.00%
- #6 PS Expanded: 0.00%
- #5 PP Rigid: 0.05%
- #5 PP Expanded: 0.00%
- #4 LDPE/LLDPE: 0.00%
- #3 PVC: 0.00%
- #2 HDPE Pigmented: 0.10%
- #2 HDPE Natural: 0.00%
- #1 PET: 0.00%

Percent of aggregate generation shown, data source DSNY 2013 Waste Characterization Study
As of July 2013

NYC Recycles
Now accepts all rigid plastics!

collection
What To Recycle for Residents

What To Recycle In NYC

Mixed Paper
Cardboard

Metal
Rigid Plastic

Glass
Cartons

bottles & jars
Sanitation Truck Decals

RECYCLING: Bulk Metal & Plastic

- appliances
- baskets & crates
- buckets
- furniture
- storage containers
- toys

* Do not collect air conditioners, refrigerators, and other appliances that contained CFCs unless they have the sticker showing that the CFCs have been removed.

REFUSE: Other Bulk Items

- fish tanks
- glass windows
- PVC pipes

NYCRecycles
nyc.gov/recycle
facebook.com/NYRecycles
twitter.com/NYRecycles
Total MGP Tons Collected from Residents

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<th>Fiscal Year</th>
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<td>233,465</td>
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<td>2015</td>
<td>244,526</td>
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<td>2016</td>
<td>274,450</td>
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</table>
In NYC, bulk recycling is collected 1x week on the recycling day. Bulk refuse 2 – 3x per week on the refuse day. The recycling day is one of the refuse days.
Residents

0X30: New York City will be contributing zero waste to landfills by 2030. Take the Zero Waste Pledge!

There’s no “away” when we throw garbage into a can or litter basket. Trash goes into landfills, where it decomposes — sending methane, carbon dioxide and toxins into our air, soil and water. 0X30 minimizes this. By contributing zero waste to landfills by 2030, New Yorkers will be protecting our environment more than ever before.

The best way to keep garbage from landfills is by limiting the materials you use. Reduce use when you can — and reuse and recycle the rest. For example, opt out from receiving junk mail, and donate or sell items you no longer need.

- Residential Collection: Schedule + Service Requests
- Foam Products
- How to Get Rid Of...

To learn the best way to dispose of products, scroll through the topics below or search by item:

- plastic toys

**Search Results:**

- plastic toys
- **toy (mostly metal or rigid plastic)**
  Donate or sell if in good condition (certain restrictions apply). Otherwise recycle with metal, glass, plastic & cartons. Be sure to remove batteries before placing in recycling bin.

learn more

Use donateNYC to quickly and easily find nearby places where you can donate used items or find second-hand goods.

Get help with donateNYC

Get started:

Give Goods

Find Goods
Residents

0X30: New York City will be contributing zero waste to landfills by 2030. Take the Zero Waste Pledge!

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Residential Collection: Schedule + Service Requests
Foam Products
How to Get Rid Of...

To learn the best way to dispose of products, search results:

bulks (mostly metal or rigid plastic)

Search Results:
bulks (mostly metal or rigid plastic)

bulks (mostly metal or rigid plastic)
Set out bulk metal and bulk plastic next to your recycling container on your recycling collection day. For appliances containing CFCs, you must schedule an appointment to place item at the curb for CFC recovery. Discard pvc pipes as bulk garbage.
learn more
Bulky Item Disposal and Recycling

Curbside pickup of oversized, non-recyclable items larger than 4ft. x 3ft. is free for residents! The following guidelines apply.

CONSIDER DONATION FIRST!
Visit nyc.gov/donate to find a donation location near you.

NON-RECYCLABLE ITEMS
Put oversized (larger than 4ft. x 3ft.) non-recyclable items like sofas and wooden furniture out after 4pm the night before your LAST garbage collection day of the week. DSNY will collect these items by Saturday.

METAL, GLASS & PLASTIC
Put metal and rigid plastic items out after 4pm the night before your recycling day.
This includes:
- bed frames
- patio furniture
- file cabinets

SPECIAL HANDLING
Call 3-1-1 or visit nyc.gov/dsny for guidelines on disposing items such as:
- air conditioners
- refrigerators
- electronics
- mattresses
- items infused with bedbugs and wood detectors in Brooklyn and Queens.

PROPER SETOUT
Items must be placed in the street, extend in front of another property, or impede pedestrian traffic. If you have a large amount of items, you should consider placing them out over several collection days.

MISSPICKUP
You can file missed collection complaints on any large items that have not been collected starting Sunday at 8 AM.

PLASTIC
Recycle plastic. For more information, visit nyc.gov/dsny.

METAL, GLASS & PLASTIC
Recycle metal. For more information, visit nyc.gov/dsny.

 Important Notes:
- Items must be placed on the curb by 8 AM.
- Items may not exceed 4ft. x 3ft.
- Items must not impede pedestrian traffic.
- Items must not extend in front of another property.
- Items must not block fire hydrants.
- Items must not block drainage sewers.
- Items must not be placed on the street for more than 1 week.

DSNY Information:
- For more information, visit nyc.gov/dsny.
- Call 3-1-1 or dial 711 for TTY.
- Follow us on Twitter, Instagram, and Facebook.
- Download the mobile app.

Note: Residential recycling is not available in 44 ZIP Codes. For more information, visit nyc.gov/dsny.
METAL, GLASS & PLASTIC
Put metal and rigid plastic items out after 4pm the night before your **recycling day**.

This includes:
- buckets
- bed frames
- baskets
- patio furniture
- file cabinets
Sims Municipal Recycling – DSNY Partner
challenges
• Multimaterial items: Kids’ car seats
• Expanded Polystyrene (ice chests, etc.)
• Hoses and other plastic rope like items
• Wheel axles
Make it easy to recycle
- All rigid plastics

Collect frequently
- Same frequency as non-bulk recycling

Educate Residents
- For bulk: REUSE first
- Otherwise: when and how to put out for recycling

Use a MRF that gets the job done!
- Understands bale specs, markets, and has right approach to sorting
Thank you.

smacbride@dsny.nyc.gov
Oneida-Herkimer, NY Drop Off Program
Northampton Reuse Committee’s

Spring Recycling Rally
Saturday, May 6, 2017 • 9 AM to Noon
Smith Vocational High School  80 Locust Street, Northampton

1. Bulky Rigid Plastic
   Nothing flexible or crinkly, no PVC

2. Pellet Fuel Bags
   Must be dry & free of dirt;
   Please stack & roll

3. White Styrofoam
   Large white chunks only,
   Must be rigid, dry & clean

4. Bicycles
   via Bikes Not Bombs
   Suggested $10 per bike donation
   to offset shipping expenses

5. Document Shredding
   Limit of 2 curbside recycling-sized boxes

For more info visit www.northamptonma.gov/reduce-waste
or call 413-587-1059
Bulky Rigid in the MRF

- MRFs sort by size/shape, then material
- Bulky rigids are pulled out at the beginning of the sorting process

Emmet County, MI - MRF
Baling Residential Bulky Rigids

What do I promote and/or include in my Bulky Rigids bale?

**YES**
- Crates
- Buckets
- Laundry baskets
- Thermoform toys & laundry furniture
- Totes & Storage containers
- Trash cans

**NO**
- Tubing - agricultural, PVC, etc.
- Corrugated pipe
- Plastic sheeting
- Vinyl - pools, siding, etc.
- Coolers - insulated or styrofoam
- Rubber - hoses
- Automotive parts x Toys
- Buckets with residual paint, ink x Pallets
- Wheelbarrows
- Toter carts with axels
- Any hazardous items or containers that held hazardous residue such as: gas tanks, chemicals, pesticides, fertilizer, batteries, or electronics
- Any other plastic or material such as: HMW, PVC, Rubber, ABS, PS, Acrylic, film or fiber
## Market Lists

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<td>Casella Recycling (ME)</td>
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<td>Clean Tech Inc. (MI)</td>
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Showing 1 to 10 of total 38 entries

Download Table Data  Email Table Data

The Association of Plastic Recyclers
Bulky Rigid in the Recycling Process
• HQ operations: Troy, Alabama
• est. 1981 to recycle PP
• Reprocess rigid HDPE, rigid & flex PP
• 400 + employees
• capacities:
  100 Million in silo & storage
  1 Billion in annual production
• Multiple certifications & supplier approvals, including ISO-9001:2008 & quality lab ISO/IEC 17025:2005
• Supply resins to automotive, rigid & flexible packaging, construction, agriculture & house wares industries
• Currently hold two FDA NOL for PP
FEEDSTOCK
HDPE Bulky Rigids

- crates
- laundry baskets
- buckets
PROCESSING

- Purchase est. 3.5 million lbs. / monthly

- Source: large & small MRFs, throughout North America (95% USA)

- Largest challenge: QUALITY
  - PP (Tidy Cats® buckets)
  - HMW (barrels)
  - Metal (toys, electronics)
**PROCESSING**
*PIR v. PCR*

**POST-INDUSTRIAL**
- "Repro"
- Reworked plastic
- Prepared from scrap, reject parts or non-uniform virgin plastic
- Owner never changed

**POST-CONSUMER**
- Recycled resin (PCR)
- Diverted from solid waste stream
- Completed life cycle as consumer bought, used & recycled
- Ownership of plastic changed

[Defined by California PCC section 12200(e) ]
## APPLICATIONS

**HDPE Injection Grade PCR**

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**KWR Plastics**

**PCR TECHNICAL DATA SHEET**

279 Pike County Lake Rd, Troy, AL 36081 | 334.566.1563 | 800.633.8744 | kwplastics.com

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### KWR 105 Portfolio

Copolymer High Density Polyethylene Post-Consumer Resins

**Injection Molding**

<table>
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<th>PROPERTY</th>
<th>KWR 105</th>
<th>KWR 105M2</th>
<th>KWR 105M4</th>
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<td>% Moisture&lt;sup&gt;*&lt;/sup&gt;</td>
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**REGULATORY**

- CONEG Compliant: <100 ppm total
- ROHS Compliant:

**CHARACTERISTICS**


**NOTE:** While this information is presented in good faith and believed to be accurate, KW does not guarantee satisfactory results from reliance upon such information and disclaims all liability for any loss or damage arising out of its use. No information contained herein is to be construed as a recommendation to use this product in conflict with any patent.

KW PLASTICS IS THE INTERNATIONAL LEADER IN HIGH DENSITY POLYETHYLENE AND POLYPROPYLENE RECYCLING.
APPLICATIONS
HDPE Injection Grade PCR
APPLICATIONS
HDPE Injection Grade PCR
Wrap Up and Questions
• Case Studies/ Success Stories
• Market Information
• Recycling Journey – Flow Chart and Video
• FAQs
• Collection
• Remanufacturing/ Applications
• Education
Coming Soon...

Recycling Plastics Beyond Bottles: **BAGS, WRAPS, & FILM**

*The Association of Plastic Recyclers*

**Marketable Material, Growing Demand**
www.PlasticsRecycling.org

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ebedard18@gmail.com
smacbride@dsny.nyc.gov
stephanie@kwplastics.com