Film Plastic Recycling Case Study - Emmet County, MI

MATERIALS RECOVERY FACILITY: Emmet County Materials Recovery Facility (MRF)

WEBSITE: http://www.emmetrecycling.org/

LOCATION: Emmet County, Michigan

OPERATOR: Owned and Operated by Emmet County

HOUSEHOLDS SERVED: Approximately 95,000 households in 4 counties

MATERIALS ACCEPTED: “Day-to-day” materials are typically collected in two groups:

Mixed Containers:
- Plastic bottles jugs and jars (leave caps on)
- Plastic tubs, trays and cups
- Cartons and paper cups
- Metal cans, foil and trays
- Glass bottles and jars

Paper, Boxes and Bags:
- Newspapers and inserts
- Magazines, catalogs and books
- Office and writing paper
- Cardboard, cereal boxes, and paper grocery bags
- Plastic grocery and bread bags
Types of Collection:

- Emmet County provides weekly residential dual-stream curbside collection using its own trucks.
- Bagged plastic bags and other acceptable film packages are placed in 64-gallon carts with Paper and Cardboard, which keeps the film clean and dry (a critical market specification). Mixed containers are collected in two 18-gallon bins at the curb next to the cart.
- Residents and businesses in a four-county area can also use 34 residential and commercial recycling drop sites where bagged film plastic is accepted in drop site bins labeled Paper, Boxes & Bags. This material is also delivered to Emmet County’s MRF by either private sector haulers or county haulers.

Type of Facility and Processing:

- Emmet County’s MRF switched from source separated to dual stream in 2009. During the time of the switch, the MRF began accepting additional materials including plastic bags/film, #3-7 plastic containers, and plastic caps. Plastic film recycling was formally unveiled to the public in 2010.
- Overhead Vacuum Tubes are installed on the container pre-sort line and the plastic container sort line to capture any bundles of bags/film that are mistakenly placed in the Mixed Container bin by residents, and also to capture bags from manual de-bagging of mixed containers that residents place in bags. The vacuum tubes air-convey the material to the Plastics Film bunker to await baling.
- Emmet County’s recycling program processes approximately 15,000 tons of recycling each year, and shipped over 100 tons of film plastic to market in 2016.

CHALLENGES:

Some plastic film ends up in the Mixed Container stream. A number of residents interpret ‘plastic containers’ to include plastic film bags, and place their bagged bags with Mixed Containers. Some residents bag their other recyclables and put the whole bundle in their bin. Vacuum tubes are installed to capture this material before it travels into the container sorting equipment.

The County’s film education emphasizes that all film plastic gets bagged. The Vacuum Tube capture system is most efficient when residents bundle all their bags and wraps into one bag, minimizing the sorters’ repetitive motion of grabbing individual bags. Sorters might miss loose bags or film which would then go to the paper line and contaminate the fiber grades.

The light weight of plastic film material makes processing cost high relative to market value of the material.
LESSONS LEARNED:

Emmet County has been successful in including the acceptance of film plastic and plastic bags for two main reasons. The first is the decision to remain a dual stream system, and designate bagged plastic bags and film to the Paper, Boxes & Bags stream. Including it with the paper keeps the film clean and dry (a critical market specification), and also keeps plastic bags from tangling with the sorting equipment used for container processing.

The second reason Emmet County’s film recycling program works well is because the County owns and operates the MRF, the curbside collection trucks (both residential and commercial), and most of the drop-site collection trucks. Emmet County can monitor specific contamination issues and address them since the County controls the material from collection to marketing. Curbside drivers perform quality control checks and leave ‘Oops!’ tags to target contamination or improper preparation of materials.

EXAMPLES OF EDUCATIONAL RESOURCES:

No amount of education and outreach is too much!

Our shorthand for the film plastics accepted is “plastic grocery and bread bags,” but case wrap, food storage bags, plastic mail-order envelopes, Tyvek envelopes, air pillows and bubblewrap are also accepted at curbside and via our day-to-day recyclables drop sites. Our line on this subject is plastic bags are acceptable if they are “stretchy, clean and dry.” To prevent escaped bags and improve sorting efficiency we stress, “please bag your bags.”

Excerpt from Emmet County Recycling Guide:

**Divide and Conquer!**

Emmet County’s recycling system is “dual stream.” Recycle your materials in the two separate “streams” shown below.

**PAPERS-BOXES-&-BAGS STREAM**
- Cardboard and paper bags
- Also okay to include: boxes from frozen and refrigerated foods, bread, wine, and beer cases, paper towel rolls, plastic wrap, plastic mail-order envelopes, Tyvek envelopes, air pillows and bubblewrap
- Please flatten boxes
- NO Styrofoam

**Newspapers, magazines, catalogs and books**
- All flat, hardcover, paperback and telephone books
- Office paper
- Also okay to include: envelopes, file folders and shredded paper
- Please contain shredded paper in a plastic grocery bag

**PLastic groCery and bread bags**
- STRETCHY, CLEAN AND DRY ONLY!
- BAG YOUR BAG - stuff all your plastic bags into one bag and tie it shut.
- Also okay to include: case wrap (as used on multiples of water bottles, paper towel rolls, bubblewrap, plastic envelopes
- NO “crunchy” plastic bags, i.e. chip/bread bags, stand-up pouches

**MIXED-CONTAINERS STREAM**
- Juice boxes, milk cartons and paper cups
- NO juice pouches or straws

**Plastic bottles, jugs and jars, food, trays and cups**
- Any plastic containers 2.5 gallons or less
- NO Plastics cups and lids, on their containers
- Are non-recyclable
- NO Styrofoam
- NO non-container plastics

**Metal cans, foil and trays**
- Metal lids, too
- NO aerosol cans or propane tanks
- NO non-container metals

**Glass bottles and jars**
- All colors and sizes
- NO light bulbs, window glass or glass dishes
- NO non-container glass

**NO non-container/ plastic, metal or glass items**

plasticsrecycling.org
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