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Grocery Store Rigid Plastics Recycling Project
Phase 2: Pilot Programs

Report of Findings

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1. EXECUTIVE SUMMARY

The Association of Postconsumer Plastic Recyclers (APR) funded these Pilot studies as part of their mission to find new ways to strengthen the economically viable and environmentally responsible recycling of post-consumer plastics. Recyclable rigid plastics, of the type found “behind the counter” in full-line supermarkets, provide valuable feedstock of growing interest to plastics reclaimers and other industry stakeholders. With rapidly increased demand for recycled-content plastic packaging and products, supermarkets who are major generators of clean plastic packaging, can play an important role with this new recycling opportunity that would benefit both the grocery industry and APR members.

Brown Sustainability Solutions (Brown SS) – a partnership between Ted Brown and Deb Ivy offering recycling and waste diversion strategies to the grocery and food industry – worked with two grocery chains over 9 months to complete Phase II of the Grocery Store Rigid Plastics Recycling Pilot Project. . Both chains agree that the Pilots offered validation required to design their own respective rigid plastics recycling programs, collect data, test functionality of the program and measure success.

Chain A - operated their Pilot from October 2011– February 2012. The Pilot provided an opportunity to streamline their current collection of rigid plastics and validate preferred collection procedures, thereby allowing them the benefit of working directly with an end recycling market. This chain chose to collect the materials in-store, backhaul the rigids to their recycling facility at their distribution center, and, for the Pilot, provide additional labor to separate the plastics from participating stores, thus providing a test opportunity for enhanced densification of materials. A staging area allowed for rigids at the distribution center and a trailer provided by the end market was live loaded once the material had been fully collected and sorted. In order to maximize trailer weight, Chain A added wood pallets, baled OCC, baled film and mixed bales of film plastic resins, in addition to bins-on-pallets of the separated rigids plastics.

Chain B operated their Pilot from February -May 2012. The Pilot for Chain B was a new recycling stream for them – they had not previously collected rigid plastics. This chain collected and sorted materials in-store also backhauling to their centralized distribution center. A trailer, provided by the end market, was set at the distribution center for the entire Pilot and recycled rigid containers were cross-docked as shipments arrived from stores. Bins were loaded without additional sorting or baling. Chain B added wood pallets and baled film plastics to achieve minimum trailer weight.

Overall Operational Summary of Findings:

- Sustainable recovery and sorting of wide-mouthed rigid plastic containers by size and color can be performed by store associates with minimal initial training and ongoing repetitive training
- Sorting by resin type can be accomplished at store level simply by sorting by container size
- Confirmation that two resins - #2 HDPE & #5 PP - can be combined in bins at store level
- Centralized baling of single or mixed resins can be performed, with extra labor
- Recovery of rigid plastic containers can enhance to Zero-Waste strategy
- Centralized training by involving a “Green” store associate leader is an effective training approach
- Pharmacy stock bottles represent at least 50% of rigid plastic recyclable waste, and most of pharmacy department waste

Overall Data Summary of Findings:

- Average Weight Metrics:

- Watermelon Bin of mixed rigid plastics containers (net of bin and pallet): ~90 lbs
- Bin full of stacked pails (#2 HDPE or #5 PP) on pallet, 7 feet high: 300 lbs
- Baled Mixed rigid resins (all rigid plastics other than #2 HDPE or #5 PP) 960 lbs
- To maximize weight efficiencies, trailers were loaded with both bins of rigid plastics as well as other recyclables: wood pallets, film plastics, OCC.
- Trailer weights for both Pilot chains, including other recyclable materials, ranged between 6800-8000 lbs.
- Volume of Material Generated Weekly
 - Chain A – approximately 50-80 lbs. per store (white, clear wide mouthed containers, covers), amounts generated depends on department/store sales volume
 - Chain B – approximately 50-80 lbs. per store (white, clear wide mouthed containers, covers), amounts generated depends on department/store sales volume
 - Pharmacy stores – add approximately 50 lbs. per store (bottles and caps), more for higher sales volume stores
- Additional Weekly Volume of “All Other” Rigids Potential Packaging
 - Chain A – approximately 50 lbs. per store (narrow mouthed bottles, colored containers) are generated, including: frying oil jugs, DVD cases, cleaning supplies, resins other than #2&5
 - Chain B – preliminary analysis of incoming shipments of products packed in rigid plastics – beyond wide mouthed (clear and white), indicate large volumes of frying oil jugs and potentially many other rigid materials, including floral buckets and chicken containers
- Material Types
 - Both chains discovered that #5 PP represented more than 85% of all wide mouthed containers collected

Grocery Chain Conclusions Post Pilot:

- This Phase II Pilot provided additional metrics details for comparison with earlier Phase I 2010 APR Study of Recyclable Plastics Recovery in Supermarkets. The 2010 Study reported “up to 350 million pounds of recyclable rigid plastics could potentially be generated annually by 35,000+ mid-sized/large U.S. supermarkets.”
- Data collected during the Phase II Pilots suggests that supermarkets with pharmacies may have the potential to generate up to 10,000 pounds of all types of rigids per store annually (which includes pharmacy stock bottles).
- Supermarkets without pharmacies have the potential to generate up to 5,000 pounds annually
- Actual pharmacy rigids recovery volume within the supermarket industry requires further analysis to more accurately project impact on total rigids recovery potential.
- Updated data collected from Phase II Pilots suggests 35,000+ midsized/large U.S. supermarkets minimally generate 175 million pounds of rigids annually (approximately 100 pounds weekly of all wide and narrow mouthed containers, except pharmacy containers). Pharmacy rigids recovery and contribute half again that amount. These figures confirm Phase 1’s estimates of 350 million pounds per year of recyclable rigid plastics.
- Please note for clarification: not included in above supermarket profile metrics are: Wal-Mart supercenters, Target supercenters, Costco-type club stores, and other discount and independent markets that depend on wholesaler delivery and backhauls. Including these “super high volume” stores and selected independents will drive the potential recovery volumes to be more in line with original projection potential.

Chain A & B Actions Coming Out of Pilots:

- Chain A & B are:
 - Committed to rolling out rigids recovery in all respective banner stores
 - Seeking best options for end markets/processors as partners
 - Integrating sustainable rigid plastics recovery into zero waste strategy
- Chain A is:
 - Analyzing benefits of installing a horizontal baler in central recycling center
 - Exploring options for local processing
- Chain B is:
 - Refining all operational processes leading to maximized rigids recovery
 - Creating benchmarking volume projection tool for individual store reporting

Pharmacy Rigids Recovery Opportunity

Phase II Pilot outcomes and discoveries highlight the need for further study and analysis of pharmacy rigid plastics recovery solutions. With pharmacy packaging (stock bottles primarily) representing 50% of total rigids generated in supermarkets with pharmacies, the opportunity to recover higher volumes of rigids is substantial. Following are recommended future actions toward formalizing pharmacy rigid plastic packaging recovery:

- Engage whole pharmacy industry, including trade associations (NACDS), in recovery of their packaging
- Test and develop best, most efficient stock bottle collection methods – secure bags vs. non-secure
- Define and abide by HIPAA privacy and security standards re: rigid plastics recovery methods
- Gather data on industry Rx bottle volume potential from recycling
- Pilot free-standing in addition to pharmacy-in-supermarket models for optimized collection
- Identify optimum logistics systems for all pharmacy models

2. BACKGROUND INFORMATION

The Association of Post Consumer Plastics Recyclers - APR Rigid Plastics Recycling Project was created by industry stakeholders – plastic reclaimers, brand name companies, resin producers – with the goal of increasing the recycling rate of rigid plastics beyond #1 and #2 plastic bottles. The “Recyclable Rigid Plastics Recovery in Supermarkets Project” was taken on to identify sources of rigid plastics currently not being recycled.

Recyclable rigid plastics, of the type found “behind the counter” in full-line supermarkets, provide valuable feedstock of growing interest to plastics reclaimers and other industry stakeholders. With rapidly increased demand for recycled-content plastic packaging and products, supermarkets as major generators of clean plastic packaging, play an important role and new recycling opportunities that would benefit both the grocery industry and APR members.

The June 2010 report “Recyclable Rigid Plastics Recovery in Supermarkets,” prepared by grocery industry environmental sustainability consultants - Brown Sustainability Solutions, Inc., (Brown SS) reported that US. Supermarkets with annual sales of \$2 million or more produce a minimum of 352 million pounds of rigid plastic containers. The report summarized findings in what is known as “Phase 1” of this project and includes data measuring potential for increasing sustainable recovery of rigid plastic containers and identifies most of the common obstacles to recovery rigid plastics in supermarkets.

3. PRIMARY OBJECTIVES

Building off these discoveries, APR, with assistance from the American Chemistry Council, engaged Brown SS to manage Phase 2 - Grocery Store Rigid Plastics Pilot Program and successfully test the recovery of rigid plastics from grocery stores. With volume and material types quantified by the Phase I 2010 Report, a second phase industry-wide recovery effort and "how to recover" action plan was developed, with results presented in the following report.

The Pilot sought to determine how to maximize volume of recyclable rigid plastics; optimize net revenue; and minimize handling cost, with sustainable and scalable long-term benefits for participating supermarkets and the industry.

4. METHODOLOGY

Two east coast supermarket chains – Hannaford, a subsidiary of Delhaize America, and Stop and Shop, a subsidiary of Ahold USA - Chain A and Chain B - each agreed to conduct minimum three month collection Pilots. Both focused on optimized collection of recoverable rigid plastics from in-store fresh departments within a typical group of stores – a District. Collection of stock pharmacy bottles was also part of the Pilot.

Delhaize America operates over 1500 stores, including 181 Hannaford supermarkets in New England and New York State. Ahold USA operates over 750 stores, including 300 Stop and Shop supermarkets in New England, New York and New Jersey. Both chains conducted the Pilot in one district, each with 13 stores.

Brown SS conducted all Pilot communications amongst stakeholders and preparation and execution functions, including qualifying participating supermarkets, Pilot planning, briefing of corporate leadership and Pilot store management, training guidelines development, centralized training kick-off, monitoring collection methods, troubleshooting, data collection and final report preparation, and communicating/coordinating with APR Rigid Plastics Program Director Elizabeth Bedard.

5. PILOT DETAILS

The following five sections explain how each chain operated their respective Pilots.

- A. Getting Started
- B. Material Types
- C. Market Sourcing
- D. In Store Operations Summary
- E. Recycling Center Operations Summary

A. Getting Started

Separate introductory Pilot startup meetings hosted within each chain involving sustainability/recycling leadership, APR, end-market representatives and Brown SS, provided the opportunity to outline key Pilot collection, handling and shipping details including: training material development, logistics, trouble

shooting, end market specifications, anticipated material value optimization, data collection and reporting. Both chains selected a Pilot district, each with 13 stores.

Chain A:

The Chain A end market partner, Stage Polymers LLC, provided initial and ongoing guidance to supermarket leadership throughout the Pilot to assure maximum value from marketing rigid plastic materials collected.

A supermarket Pilot leader was committed to manage the three-month collection process with a goal of optimizing collection of nested rigid plastic pails and lids from in-store departments, addressing barriers to collection, testing various densification options including centralized baling. Collection of pharmacy stock bottles was treated as a separate element of the Pilot due primarily to special handling requirements related to privacy law issues. This retailer has a prior history collecting rigid plastics and using a local recycling market.

The Pilot leader completed training within each store individually, meeting with each department manager, installing signs, explaining Pilot details, setting up collection locations and answering questions.

Chain B:

End market partner, Rehrig Pacific Logistics, provided valuable input in the initial planning meeting, provided assistance to leadership throughout the Pilot, with the objective of optimizing material value and handling efficiencies.

A district recycling team leader "Green Captain" along with individual store recycling Green Captains guided the Pilot collection process within each store. With a goal of saving emptied (white and clear) open-mouthed rigid containers from deli, bakery and seafood departments, and Pharmacy Stock bottles, each recycling team leader addressed barriers to collection and trained store associates to clean, rinse, dry and properly nest designated emptied containers.

To comply with store safe handling and limited space availability, a helpful in-department collection method was devised - involved placing rinsed containers upside down on a dedicated "drying fixture" (small used metal wire rack) to dry. This process eliminated odor issues and provided a daily visible inspection mechanism to assure desired cleanliness, with minimal handling labor

B. Material Types:

Primary material types for deli, bakery and seafood departments in both chains collected were #2 HDPE (high density polyethylene – HDPE) and # 5 PP (polypropylene – PP). Both chains estimated 85% of all rigid containers were #5 making nesting by container size ideal for sorting by resin as well. Most #2 containers were generated in just two sizes – optimizing nesting by size and resin -type, ultimately benefiting end market value.

Examples of Rigid Plastics found in most supermarkets:



A)



B)



C)

A) #2 HDPE – 2.5 Gallon Container filled with Bettercreme Frosting

B) #5 PP – 3.5 Gallon Container filled with Donut Glaze

C) #2 HDPE – 4 Gallon Container filled with Bettercreme Frosting



D)



E)

D) #5 PP – .5 Gal Container filled with Deli Salad

E) #5 PP – 3.2 L Container filled with sliced vegetables

Chain A: This chain had previously been collecting a broader range of rigid container types and resins in some stores prior to starting the Pilot. To better understand operational dynamics and market opportunities

of this recycling stream, a centralized "second sort" was performed to assure only No. #2 HDPE & #5 PP resins were included for shipment to market, and to evaluate best handling of all other resins. It was determined that #2 HDPE & #5 PP represented approximately 95% of all wide mouthed rigids collected. Pharmacy stock bottles were also collected. Some customer vials (bottles returned by customers) were also included in the Pilot – requiring a specific system for managing HIPAA privacy and security standards by locking reusable containers totes that are sent from the store, remaining locked at the recycling facility and only unlocked by the end recycling facility that is HIPAA compliant. Further review of both customer vials and stock bottle collection was found necessary to include this in the program long term.

Chain B: Material types were limited to #5 PP and #2 HDPE. Polypropylene #5 represented 90% + of all rigid plastics collected during the Pilot. Pharmacy stock bottles, mostly #2 (from the filling of prescriptions), were included in the Pilot. No customer vials were included. Stock bottles were collected in clear plastic utility bags and returned in or on bins of nested rigid pails and trays. HIPAA-related issues (presence of customer "vials" mixed in with stock bottles), and concerns for prescription drugs turning up in emptied stock bottles, were less prevalent, due in large part to previous training efforts administered by a seasoned pharmacist.

Note that in Phase 1 in the 2010 study, grocery store rigid plastic material types comprised of approximately 50% #5 PP and 50% #2 HDPE. During the Pilot, new data showed that a large majority of this material is PP. There are some categories of items that once were packed in an alternative material type and now are packed in PP. For example in the Produce category, wired, wood boxes are being switched out to PP corrugated boxes for shipping corn from the producer to the store. Chain A is now exploring specifying #5 PP corrugated boxes so that it can be recycled rather than pay for disposal cost of the non-recyclable wired, wood boxes.

C. Market sourcing

Markets for rigid plastics, of the type collected in this Pilot, are very interested in recovery and marketing of #2 HDPE & #5 PP rigid plastics. Several potential markets were approached to participate in the Pilot for both chains. The following criteria were used to select a market:

- Establish minimum weight loads: both chains had 8,000 pound load minimums
- Meet with Pilot managers to provide guidance and suggestion
- Pay current market rate for collected rigid plastics
- Provide feedback as to condition of load
- Provide a trailer for storage during the Pilot or live loading at the end of Pilot

For the Pilot, each chain worked with a different market, both of which met the above criteria.

D. In Store Pilot Operations Summary

i. Rigid Buckets/Pails and Trays Collection

The departments involved in the Pilots included Deli, Bakery, Seafood, and Pharmacy. For all departments but Pharmacy (see separate pharmacy section below), the following collection methods were focused upon:

- Scraping: Rubber-type spatulas or other utensils were used to remove solids from buckets
- Rinsing methods: If necessary, each pail/tray was rinsed to remove any food residue
- Stacking: emptied, rinsed containers were nested/stacked in cardboard storage bins (aka watermelon, melon, pumpkin/squash bins)

- Storage: Bins were made available through company supplies program or distribution center. Bins were stored in supplies warehouse – ordering, storage location, filling w/nested containers by size, lids, misc. in large clear collection plastic bags

Photo: Well Prepared/Nested Bin:



Photo: Poorly Prepared Bin:



Understanding that greatest efficiencies derived from recycling (rigid) plastics largely depends on: (1) sorting and neatly stacking (for maximum densification) white and clear containers with lids separated (2) exceptionally clean (all residue removed, rinsed) (3) separated by resin type (stacking at the source, sorting by size usually assures keeping resins separated)., were frequently emphasized.

Optimum dollar value for retailers from recycling rigid plastics can be best achieved by, in order of best to least value, by:

\$\$\$\$\$	Baling by resin and single color
\$\$\$\$	Baling by resin and multiple colors
\$\$\$	Baling by mixed resins
\$\$	Stacking like sized, single resin type containers and lids on single pallet
\$	Stacking like color, #2 & #5 in bin

To determine the most immediate, convenient and efficient methods of collecting and transporting stacked containers - lids separated, both chains opted to utilize readily available melon bins for in-store/backroom collection, return to the distribution/recycling center and shipping to market.

Chain A tested baling #2 and #5 white and clear containers and lids, plus a mixed resin bale, as part of an analysis to determine possibility of implementing this practice in the future to realize most optimum revenue from market (maximized resin value plus lowest transportation cost).

Although numerous store-level staging and collection options were considered – ranging from stacking nested containers on pallets and shrink wrapping, to use of large specially-designed bins, the choice of used melon/pumpkin bins was most desirable due to their abundant availability, ease of storage and relatively low cost. Both chains elected to stay with multi-use melon bins for the Pilot collection.

Chain A is evaluating the operational and net revenue benefits of centrally baling rigids as they deliberate long term options for maximizing densification of various resin types.

ii. Pharmacy Collection

Chain A: This chain collects some customer vials and concerns around HIPAA privacy and security standards has required them in the past to collect all stock (which are mixed with customer vials) bottles in reusable totes, send them to a certified recycling facility, and then have the reusable totes returned to the distribution center. Chain A tested filling clear tamper proof plastic bags (19"x33"), each holding an average of 10-12 pounds, fitting 8 bags per watermelon bin, stacked 3 bins high per pallet in a truck would equate to approximately 240 lbs. The cost of a bag was \$.60. They found that filling reusable totes nets the same volume as the 19x33 inch plastic tamper proof bag. In the future, they plan to use the reusable totes shown below.



Photo: Chain A - Reusable Totes for Pharmacy Bottles

Chain B: Pharmacy stock bottles, collected in compact space-saving collection bins lined with clear utility bags, were separately staged with filled bags placed on top of full bins of nested rigid containers. Collecting pharmacy (stock) bottles in separate bags is most efficient handling method for pharmacy department, trucking, and Central Recycling Center. Customer bottles were not included in this collection.



Photo Chain B – Collection Container in Pharmacy



Photo: Chain B Bagged Pharmacy Bottles

iii. Training

Training store associates to easily recognize rigid plastic containers for recycling is a relatively simple, yet critically important task. Chain A Pilot leader personally conducted all training within each store in the Pilot district. Chain B brought individual Green Captains to a central kick off meeting, followed by each Green Captain conducting training within each department within designated Pilot district stores.

Both chains sent letters to their associates in advance of the training, explaining the details of the program. Samples of the letters are on the following pages.

An FAQ Summary Sheet was also an important component in the training; a sample is also included in the upcoming pages.

Chain A and B both created specific signage to assist associates with their understanding of identification of rigid plastics. Examples of such signs are also included in the following pages.

Chain A:

In Store, Company Led Training Program

As has been mentioned, Chain A has past experience in collection of rigids. This program provided the opportunity to offer a fresh training protocol for each store. Thus, Chain A provided all training for pilot stores. In each individual store the Pilot leader passed out signs explaining what containers to collect and how to identify #2 and #5 resins, along with Q&A sheets and a store associate letter explaining why the Pilot is important (See examples on following pages). Samples of all designated rigid plastic containers were used to demonstrate how to empty rinse, dry and stack by size. Bins (usually watermelon bins) were set up to demonstrate how to properly nest like-sized containers. Covers were placed in separate (clear) garbage bags to keep them separate from nested containers. Time was allowed for plenty of questions and answers. A printed Training Guideline, such as the one on the following page, was used to demonstrate the task and action items in performing the collection of rigid plastics.

Chain B:

Centralized/Brown SS Led Group Training

To prepare individual store "Green Captains" with the necessary tools and information to go back to their individual stores and train each (deli, bakery, seafood and pharmacy) department manager and associates, a one-hour centralized training session was conducted at one of the participating Pilot district stores

adjacent to other district Pilot stores. The district Green Captain organized and led the training session with help from Ted Brown of Brown Sustainability Solutions.

In addition to learning about “Why collection of rigid plastic containers is important” and “What containers were included in the Pilot”, the group training provided an opportunity for representatives from logistics, distribution, operations, sustainability leaders and other company stakeholders to learn How To:

- Identify which wide mouthed containers/trays would be collected
- Remove residue solids from containers
- Efficiently rinse containers, if necessary
- Place rinsed containers on specially provided (used) multi-shelf “drying rack”
- Nest container by size in dedicated melon bin
- Fill bin to the top before shipping to recycling center
- Mark store number on bin
- Collect container covers in separate clear utility bag and place on top of filled bin
- Collect pharmacy stock bottles in separate clear utility bag and place on top of filled bin
- Inspect bin and remove contamination/debris from bin before returning to recycling center

Brown SS provided industry background and reinforced key operational practices that would ensure Pilot success, including focus on:

- Importance of repeated ongoing training of current and new department associates
- Communicating the incremental benefits of recycling rigids: waste reduction and potential new revenue from hungry end markets
- Simplifying collection and handling methods
- Importance of cleaning containers as they are emptied to prevent odors and protect food safety
- Consolidating containers, covers and pharmacy bottles separately to save space and handling

Individual In Store Training

Each store’s Green Captain personally provided training and trouble shooting for each store, beginning with a centralized “all department” meeting. Following the meeting, Pilot department managers, and Green Captain provided individual refresher training sessions. Training Guidelines and signs were distributed to all associates in each participating department. The Guidelines briefly provided specific information for establishing collection routines, including: signs, rigid plastics definition, cleaning, drying, stacking and storage methods.

SAMPLE Associate Training Guidelines to Recycling Rigid Plastic Containers:

Actions	To Do
1. Recycling Preparation	<ul style="list-style-type: none">a. Order Watermelon Binsb. Designate and area for storing watermelon bin placed on a wood palletc. Label Watermelon Bin with your store sticker
2. Clean Empty Plastic Containers	<ul style="list-style-type: none">a. Remove and clean lids from containers and bucketsb. Using water and soap if necessary, rinse and dry empty plastic containersc. Stack cleaned lids separate from cleaned containers and bucketsd. Pails from buckets and containers include:<ul style="list-style-type: none">i. Pails from deli saladsii. Seafood containers and traysiii. Bakery buckets (icing/frosting).
3. Stacking	<ul style="list-style-type: none">a. In each department, stack containers by size before removing them to the backroomb. In the watermelon bin, stack pails by sizec. Fill to the top of the bin, without overflowingd. Maximize space by filling in small gaps with lids; or place lids in a clear plastic bag
4. Return Plastics	<ul style="list-style-type: none">a. Inspect full bins and remove any trashb. Return full bins on the "clean out" truck going back to DCc. If needed, watermelon bins can be stacked in the truck with a wooden pallet in between
5. Check Your Work	<p>Goal: Properly Recycled Hard Plastics</p> <ul style="list-style-type: none">a. Label the bin with a store stickerb. Hard Plastics containers have been cleaned; covers removedc. Pails are stacked according to size and shaped. Lids are stacked in between or bagged.e. Bin has been filled to the topf. Full bin is in the "clean out" truck ready for deliver back to the DC

SAMPLE Rigid Plastics Recycling Pilot Questions and Answers for Stores

What are Rigid Plastics?

Unlike film plastics (pallet wrap, stretch wrap), rigid plastics as part of our Pilot are in-store food containers with lids or covers, predominantly from food preparation in deli, bakery, seafood, and pharmacy (stock bottles)

How can I distinguish #2 or #5 rigid plastics from others (#1, 3, 4, 6, 7)?

A triangle with the resin number is embossed on the bottom of each container. Covers usually do not have a number, but can be included with the respective container

Why are only #2 and #5 rigid plastics included in this recycling Pilot?

High Density Polyethylene - HDPE (#2) and Polypropylene – PP(#5) plastics have high market value to recyclers and are increasingly sought after by plastic packaging manufacturers, collectors, and associated businesses. More and more packaging contains recycled content, creating greater demand for #2 & #5 recycled plastics

Why are we recycling Rigid Plastics now?

Expanding in-store recycling programs beyond traditional cardboard, film wraps and plastic bags, to include now more valuable rigid plastic containers will save money and help strengthen our commitment to being a more environmentally sustainable company

What savings can our store expect from recycling Rigid Plastics?

First, by recycling we eliminate the cost of waste disposal, which is significant. Additionally, if we do a good job of collecting all designated clean containers will receive the maximum market value for each pound recycled – amounting to several hundred dollars annually. Recycling saves our environment.

How long will the Pilot last?

Approximately three months.

Once the Pilot is over, will we continue recycling?

With a successful Pilot we plan roll out rigid plastics recycling to more stores.

If we have a question about the Pilot, whom do we ask?

Green Captains will be prepared to answer questions and help in whatever way necessary to help make the Pilot a success

Do labels need to be removed?

No

Should covers be removed?

Yes, and covers can be recycled

Rigid Plastic ONLY!

YES

CLEAN HARD PLASTICS!

- Deli Salad Pails
- Seafood Trays
- Bakery Buckets
- Muffin Trays
- Empty Cleaning Product Bottles



MAXIMIZE SPACE!
Nest same numbered plastic together...
LOOK for the number on the bottom of the container



NO

- Food Waste
- Shrink Wrap
- Returnable bottles
- Plastic Bags
- Waxed Cardboard

Thank you for your effort!!

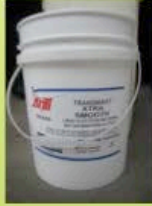




It Pays To Recycle!



How much are White & Clear Plastic Pails or Fish Trays worth?



Approximate Value:

5 gallon pail = 45 ¢

4 gallon pail = 30 ¢

2 gallon pail = 20 ¢

Fish Tray = 15 ¢

Why Recycle Plastic?

Energy Conservation - Producing new plastic products from recycled materials uses 2/3 less energy than making products from raw (virgin) materials. In 2007, the U.S. recycled over 4 billion pounds of plastic, which saved enough energy to heat over 2.1 million homes.

Reduced Greenhouse Gas Emissions - When recycled material is substituted for virgin material, greenhouse gas emissions from extraction, preprocessing and production are significantly reduced.

Beneficial Reuse – Recycled plastics can be made into hundreds of everyday products, including fleece jackets, carpeting and lumber for outdoor decking.

Greater Recycled Plastic Supply & Demand - The more we recycle, the more recycled plastics are available, and the more recycled plastics that we buy, the more the industry will create.

Conserving Save Landfill Space - Conserving landfill space is crucial as landfills reach their maximum capacities and shut down, and other land is limited for creating new landfills.



iv. Labor

In both stores, additional labor was allocated for initial Pilot training purposes, taking up to 1 hour per store. Individual store recycling team leaders were centrally trained in one store by district recycling team leader, followed by individual store associate training in each store's deli, bakery, seafood and pharmacy. To most effectively communicate operational procedures signs in each department provided essential container identification, cleaning, nesting and storage information. (see previous pages for examples of signage.)

Chain A: Concerns among individual department managers that "extra labor" would be required to rinse, sort and stack emptied recyclable pails and trays were addressed by time studies which demonstrated that the amount of time to "scrape residues and quick rinse" emptied containers with food residue did not exceed the amount of time to dispose of containers in traditional manner.

Chain B: Little, if any, incremental labor was required to collect emptied containers, compared to traditional disposal in waste practices. In fact, by requiring all containers to be first wiped free of solid residue, it was generally concluded that there might be less shrink (inventory loss) by leaving less waste in buckets

v. Associate cooperation

Associate cooperation was high in most Pilot stores in both chains. An employee letter announcing the Pilot a week prior to kickoff (See following page) provided each participating department associate with advance understanding of the Pilot purpose, importance to store, district and company, along with details involving their commitment

Although some stores got up to speed more quickly than others, there was overall acceptance of the change in culture from "just throw it away" to "we now sort #2 HDPE & #5 PP by size" because we make some money by recycling, save waste disposal cost, and "it's the right thing to do" – not to waste. Sample Pilot Letters are on the next page.

vi. Importance of ongoing training and communications

- Ongoing communications and awareness training within each department is necessary, especially in initial weeks, and ongoing to assure optimum rinsing, collection and nesting of all containers, covers, and prescription bottle collection
- Regular ongoing reminders and refreshing of proper collection methods will assure program success
- Repetitive ongoing training and focus on collection of properly scraped/emptied/rinsed containers is essential to assure optimum end market value, reduced risk of load downgrading, and can also help reduce store shrink (providing feedback mechanisms are in place).
- Contamination can be a challenge. Both chains determined that accountability is critical to the success of receiving clean material. It has been discussed that upon rollout of this program chain-wide, stores should be held financially accountable if bins are returned to the warehouse/recycling facility in poor condition (loosely filled, containing trash or other non-program materials).

SAMPLE Pilot Letter to Associates

Have you ever had a hard time throwing something away at your store because you knew it could be used for something? Do you get that pit in your stomach and feel like "this just isn't right". Well Corporate Responsibility is here to save you from that feeling! Instead you can feel like a million bucks knowing that you and your company are doing what it takes to keep this Earth healthy for future generations.

For the next 3 months, your store and district is participating in a test to maximize recycling and further reduce our impact on the environment. We are asking you to increase focus on recycling - specifically hard plastics. By increasing the weight of our watermelon bins and doing some sorting of plastic types we will see our plastics turn from trash to cash!

What's in it for you? Aside from being superstars in the groceries business there are many benefits for you by helping us with this test.

- Furthering our already industry leading status as a recycler and steward of the planet, you can be part of something BIG!
- You will be "doing the right thing" as a steward of the natural world
- You can help save our company real money and help make us an even stronger company in these crazy economic times.
- But most importantly...you could receive some pretty cool prizes and incentives...

We will explain all of the details in our training scheduled for:_____

Thanks for all of your support in our recycling project!

SAMPLE Pilot Letter to Associates

Dear associates:

Beginning _____2011, our store will begin a three-month Pilot to demonstrate how store associates can easily recycle of rigid plastic open top containers in deli, bakery, seafood and pharmacy – Rigid Plastics Recycling.

Details of the Pilot will be explained in individual department meetings.

The advantages to our company are many, including reduced waste disposal costs, increased recycling revenue, higher recycling rates and a better more sustainable environment. Our communities will benefit by having less waste.

We ask for your cooperation to help make this new recycling Pilot a success and to demonstrate that our store and district will help jump start this exciting new recycling program for other stores in our company.

Thank you for your help!

Store manager

vii. In Store Discoveries/Challenges/Opportunities

- Density of bins full of pails and trays: this varied from a well-stacked full bin weighing an average of 65 lbs. to a loosely filled bin weighing 40lbs. , more or less. More training over time will help to assist stores in achieving maximum weights.
- Debris/Trash: Debris in bins ranged from incidental trash (paper and plastic) to miscellaneous plastics other than #2 HDPE and #5 PP. Education is key to meeting this challenge.
- Prescription stock bottle collection: Further testing of prescription bottle collection methods are needed to determine most secure, safe and efficient methods of collection, handling, densification and preparation for market is ongoing.
- Minimizing transportation costs/maximizing revenue: To assure minimum transportation cost long-term and assure full market value, densification of (nesting tightly by size) containers is critically important. The Pilot demonstrated ongoing need to raise awareness to importance of packing each bin as tightly as possible to minimize space and handling at store level, on truck trailers and at the Recycling Center.
- Covers: Collecting plastic covers in separate (clear) utility bags, helps keep bins neat for nesting containers
- Limited work space: Stores with extremely tight work areas may need to rinse, dry and nest containers more frequently to prevent operational congestion

E. Distribution/Recycling Center Operations Summary

i. Storage

Chain A: As bins of rigid plastics arrived from stores, they were staged in a separate area of the distribution center - recycling center warehouse including recovered pails, trays, lids, prescription stock bottles. This additional space provided Chain A the opportunity to store, hire temporary staff to manually sort the resins, test weights of bins and pallets then live load the material directly to a trailer (rather than staging a trailer on-site.)

Chain B: As bins of rigid plastics arrived from stores, they were cross-docked from the backhauled truck containing other recyclables from stores, directly to an on-site trailer provided by the market. Due to extreme space constraints at the recycling center, staging for in depth inspection of individual bins for nesting density and contamination was limited.

ii. Labor:

As with any recycling program, each additional handling of recovered materials can add labor expense. One of the goals of the Pilot was to determine what impact the recovery of rigid plastics would have at the distribution/recycling center unloading point. Faced with differing challenges and goals, each chain approached handling of bins full of rigid plastics differently.

Chain A: To determine the most efficient manner to meet the designated minimum 8,000 pound load weight, an additional amount of one time labor was allocated; in three separate sessions, to test sorting of rigids by material type into the most dense form, including limited baling.

Chain B: This chain chosen not to use any additional labor during the Pilot for restacking and sorting of rigid plastics at the Distribution Center. They educated associates during training to densify by properly nesting containers in stores and cross-dock directly to an onsite staged trailer.

Outcomes from each Pilot provide valuable lessons for minimizing labor. One key conclusion: effective ongoing store level training can lead to minimized labor at the distribution/recycling center.

iii. Stacking

For Chain A, an extra sorting step was added at the recycling center where seafood Trays, deli containers, and bakery frosting buckets were all stacked on pallets and shrink-wrapped. Also, net weight of watermelon bins with neatly, tightly nested stacks of containers were compared to loosely randomly filled bins proving that well stacked bins weighed 90+ pounds, more than doubling bin density and weight.. Most buckets are of similar sizes – 2 gallon and 5 gallon were standard volume sizes. Examples stacking photos are shown below:



Photo a. Seafood Trays Stacked



Photo b. Buckets Stacked

iv. Data Collection

Chain A performed multiple weight tests using a digital scale. Chain B conducted random representative bin weigh tests to confirm average bin weights. Net weights of containers were measured in a previous *Phase 1 Rigid Plastics Recovery Report from June 2010*; photos of sample containers were also included in that report and are shown on the following pages:

RIGID PLASTIC BUCKET WEIGHTS*

- Estimated from a 2010 Pilot Study;
- Please note that current weights subject to change due to lightweighting and changes in materials.

Label	Container Volume	Resin #	Pail Weight	Cover Weight	Total Weight	Total Container Weight Ounces
	2 gal	#5				34 oz
5 lb.	1/2 gal	#5	8.7 oz	.7 oz	9.4 oz	9.4 oz
15 lb.	4 gal.	#2	1 lb. 5.9 oz	3.2 oz.	1lb. 9.1 oz	25.1 oz
9 lb.	2 gal.	#2	14.5 oz.	3.2 oz.	1 lb. 1.6 oz.	17.6 oz
35 lb.	5 gal.	#2	2 lb. 3.4 oz.	4.7 oz.	2 lb. 8.1 oz.	40.1 oz
40 lb.	3 ½ gal	#5	1 lb. 5.8 oz.	4.7 oz.	1 lb. 10.5 oz.	26.5 oz
64 oz.	½ gal	#5clear	1.7 oz.	1.1 oz.	2.8 oz.	2.8 oz
.85 gal.	.85 gal.	#5clear	3.9 oz.	1.5 oz.	5.4 oz.	5.4 oz
Rectangle		#5	7.0 oz.tray	4.7 oz.	11.7 oz.	11.7 oz
Asparagus		#5	6.9 oz. tray		6.9 oz.	6.9 oz
Chemical cleaner		#5	12.2 oz. jug/clear		12.2 oz.	12.2
Nutra-Clear cook oil		#2	9.9 oz. jug		9.9 oz.	9.9

Average weights of the following were determined for purposes of this Phase 2:

- Empty Watermelon Bin Weight = ~18 lbs
- Pallet Weight: ~63 lbs
- Stacked Pallet of #2 or #5: ~300 lbs
- Mixed Bin: bin: 63-90 lbs depending on how tightly nested; 40 lbs loose; baled: 960 lbs
- Prescription Bottles: bin: 80 lbs

Some Pilot stores tracked the number of watermelon bins collected during the Pilot, along with other materials. Sample tracking sheets for the stores and DC appear on the following pages.

In Store Tracking Sheet for Rigid Plastic Recycling

How to use this sheet

1. Inspect the bin for trash and other items not included in the Rigid Plastics Recycling Program
2. Confirm bin is full, neatly stacked and RX bottles (if in the program) and lids are bagged and on top of the bin.
3. Indicate date of shipment and number of bins returned to the DC
4. Place a sticker with your store number on the bin and initial the form.

Date	# Bins Returned to DC	Initial
Sample:		
6/15/12	2	DI

Distribution Center Tracking Sheet for Rigid Plastic Recycling

How to use this sheet

1. Inspect the bin for trash and other items not included in the Rigid Plastics Recycling Program
2. Confirm bin is full, neatly stacked and RX bottles (if in the program) and lids are bagged and on top of the bin.
3. Indicate date of shipment and number of bins returned to the DC
4. Record Store Number & Bin count for each store in load
5. Record Bin Condition - (E)xcellent, (G)ood, (P)oor

Date	# Bins Returned to DC	Store #	Bin Condition
Sample			
6/15/12	2	31	E

Chain A: Baling trials were performed on other resins –“mixed rigids” (other than #2 & #5 such as fryer oil containers) to test benefits of further on-site densification and optimize density/weight per truckload for the Pilot. Trial findings include the following general understandings:

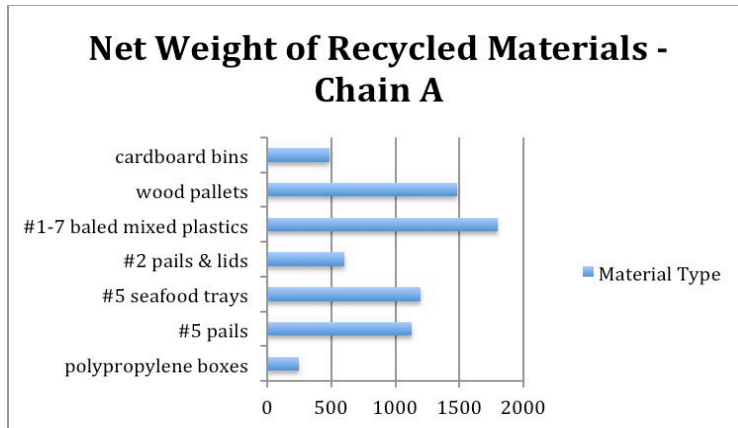
- “Down-stroke balers, of the type used for baling cardboard and film plastics, were used for baling.
- Baling benefits:
 - One bale of rigids (all plastics except #2 HDPE & #5 PP) equates to 5-10 bins of (loose to tightly nested) containers and covers
 - By pre-sorting containers and covers by resin type and baling, baled material has much higher market value
 - Heavier truckloads, lowering pick up frequency = lowest/optimum transportation cost
 - Approximate weight of mixed bale: 960 lbs
- Baling barriers/challenges:
 - Liquids in some containers create issues with odor and additional clean up labor
 - Some containers are difficult to bale, but more training may resolve this issue
- Horizontal baler opportunity:
 - Replacing current down-stroke baler(s) at central recycling/distribution centers with a single high-density horizontal baler would diminish or eliminate most barriers and challenges and provide additional incremental value including ability to more efficiently bale multiple materials – OCC, film plastics, along with rigid plastics



Photo: Any container resin types other than wide mouthed #2 were baled as “mixed plastics.” Bales contained #1 bottles, #2 jugs & bottles, #3 containers, #4 bottles, #7 mixed resin containers.

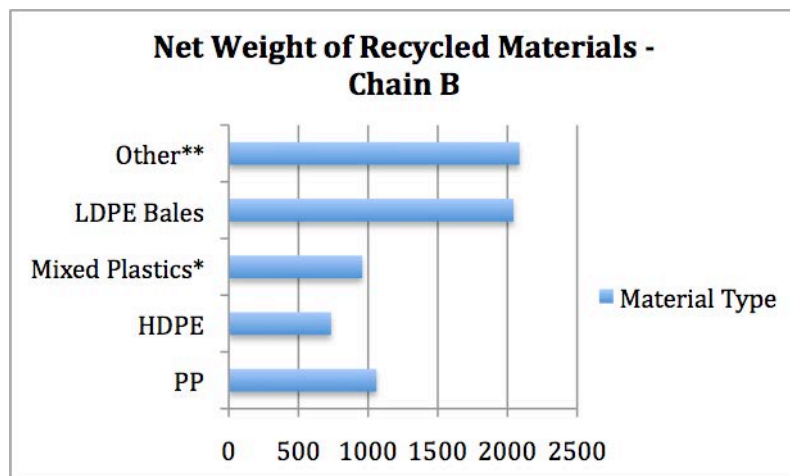
v. Trailer Loading and Transportation

Chain A: The trailer was live loaded since storage space was allotted in the recycling warehouse during the Pilot. Net weight of recyclables: 7955 pounds. It should be noted that to reach this number, Chain A included rigid recyclables from stores outside of the Pilot. As has been stated, Chain A has been recycling rigid plastics prior to the Pilot and included other stores in this load. The truck was loaded with the following materials (weights shown are measured in pounds for each recyclable material):



Chain B: Bins of rigid plastic containers received from stores were “cross docked” (not staged and stored separately at the distribution/recycling center) and immediately loaded on to a dedicated trailer provided by the end market for the recycled plastic. Store numbers, applied to each bin at the store before returning to the distribution center, allowed tracking of bins received during the Pilot. This tracking process, put in place for the Pilot, allowed evaluation of individual store performance.

Below the net weight of materials was tracked at the recycling market receiving dock. Materials were separated, weights were taken, and tracked. Additionally, shrink film bales of LDPE were loaded to maximize the weight of the trailer. Total weight on the trailer contents was 6,882 pounds.



*Mixed Plastics is considered to be anything that was not HDPE or PP.

** “Other” materials were considered to be items that are not plastic (boxes, paper, bags, milk cartons) as well as unrinsed plastic containers with food contamination.



Photo: Chain B Baled Film Plastic (LDPE)



Photo: Chain B Trailer Loaded with Bins of Rigid Plastic

vi. Distribution/Recycling Center Perceived Discoveries/Challenges/Barriers

- Allocating storage space at the Distribution/Recycling center to stage bins returned from stores for additional sorting requires a dedicated area for several dozen pallets with bins to allow manual sorting by resin type and container size.
- Staging bins allows for inspection of materials for contamination and nesting evaluation. In early stages of Chain A Pilot additional sorting was required due to containers with food residues (limited amounts of frosting from one or two stores) and resulted in rejection/disposal of less than 1% of containers collected.
- Learning to bale mixed rigid plastics in downstroke-type balers required a brief learning period normally experienced with handling containers of various sizes, including handling of residual liquids in some jugs, and keeping small bottles contained in each bale
- When cross docking, bins must be inspected for contamination prior to loading on the staged recycling trailer.

6. PHARMACY

A. Discoveries

Both Pilots highlighted the important discovery that pharmacies offer unique opportunities for further waste reduction in fact both Pilots demonstrated that rigid plastic bottles (wide and narrow mouthed “stock” bottles) make up most of the waste generated in in-store pharmacies. As part of “greening in

store operations," many pharmacists welcome recycling and appear receptive to switching from disposing large volumes of containers in waste bins to setting up dedicated bins for recovery of rigid containers.

Other than paper waste generated in pharmacy operations, pharmacy stock bottles likely represent over 90% of pharmacy waste, and may represent 50% or total rigid plastic waste generated at store level. These discoveries clearly point to the need for further future analysis and an opportunity to implement more industry-wide recovery practices

Pharmacy Opportunities and Challenges Needing Further Study

HIPPA – Patient privacy laws, known as HIPPA are of highest priority in all pharmacy operations, and impact how emptied pharmacy bottles are disposed of behind pharmacy counters. Scaling up collection of patient pharmacy bottles will require strict compliance with all industry laws and regulations.

Risks Associated With Medications Found in Emptied Bottles

Further sensitivity training with pharmacy staff is necessary to prevent pills (from filling of prescriptions) turning up in recycled prescription bottles. This reality presents a major barrier to initiating comprehensive recycling of pharmacy bottles, which needs resolution.

Issues With High Volume, Bulkiness of Rigid Plastics in Space-constrained Work Areas

Most retail pharmacy service workspaces are extremely small with little available floor space for collection of recyclables such as rigid plastics. More testing of various collection options and further education may prove to diffuse this issue.

Rx Bottle Collection Options

Chain A utilizes internal reusable totes to collect, stage and transport Rx bottles for recycling. While these totes are readily available (they're used to ship non-foods and other low-cube products to stores), getting them back through the distribution system to be reused can be labor, space and transportation intensive.

Chain B utilized clear plastic trash bags to collect, stage and transport stock only Rx bottles for recycling. Bags filled with pharmacy bottles, and removed caps, are placed in or on bins of nested rigids from other departments, returned to central distribution centers, and are loaded on to trucks with other rigid plastics bound for end markets.

Both chains understand the significant value of recovering Rx bottles – to avoid disposal costs and potentially realize revenue from recycling. Both seek to find greater efficiencies for collecting Rx bottles as a result of the Pilot.

B. Opportunities to be Realized

1. To stimulate more interest in recycling within pharmacy operations, promote the fact that stores with pharmacies can realize significantly greater savings by recycling more – pharmacy rigid plastics represent approximately 50%, by weight, of rigid plastics generated in each store
2. Find a compact, operationally efficient collection bin that the industry could use universally may help overcome space issue barriers
3. Develop a collection bag that addresses HIPPA privacy and security standards and store safety issues, is low cost and optimal in size to fit universal collection containers.

4. Given the large volume of pharmacy stock bottles (and consumer vials) generated by all pharmacies, it is important to engage the pharmacy industry – from manufacturer to retailer – in the development of efforts to standardize packaging-for-recyclability and efficient recovery systems
5. The Pilot revealed that Caps on stock bottles are #5 PP, whereas the bottles is #2 HDPE. During in-store collection keeping Caps segregated from bottles will enhance market value.

7. TRENDS& ISSUES

PP Corn and Asparagus Crates - Growing amounts of #5 PP shipping containers appear to be showing up in selected perishable departments, most notably PP corn crates replacing highly wasteful/non-recyclable (although sometimes reused) wire wood/wire-bound crates. The avoided cost of disposing of wired/wood corn crates can be significant, especially during high corn consumption seasons. It is not uncommon for an average supermarket to go through 75-150 crates of corn a week during a corn sale. Replacing this wasteful disposal practice with 100% recyclable PP crates yields savings from avoided hauling and landfilling fees and newly found revenue from recycling.

It may become a more common practice to replace high volume wood shipping crates or various forms of poly/waxed-coated-OCC, with PP boxes for shipping asparagus and corn - offering a new opportunity to recover this valued material from supermarkets waste streams.

Grocers are Working with Suppliers to change to Recyclable Packaging

Some retailers are successfully getting more growers to convert to recyclable material, such as the PP corn crates and PP asparagus crates as outlined above. Proactively encouraging growers to switch to recyclable shipping containers can make a difference.

Installation of Horizontal Balers vs. "Down-stroke balers" at Distribution/Recycling Centers

As more grocers progress toward meeting zero-waste goals, many are looking to improve internal recycling operational efficiencies. A major potential cost-saving opportunity involves dedicating resources to replace widely used down stroke balers with labor and space-saving high-density horizontal balers. Indications are that the payback can be attractive.

Replacing Labels on Containers with Recyclable Materials

Non-recyclable labels and labels incompatible with container resins are problematic and add confusion when recycling at store level and at distribution/recycling centers, as well as cause devaluing of recycled rigid plastics. This is a major area for the plastic industry to address, and once solved will eliminate a barrier to collection and create another incentive to recycle.

Pharmacy "Stock Bottle" Paper Contamination

A significant amount of pharmacy stock bottles have large amounts of paper instructions attached, which causes excessive contamination and devalued (or negative value/additional cost to retailer) material at end market. This issue needs to be seriously addressed by all stakeholders, including at the source – the pharmacy manufacturers.

8. FINAL CONCLUSIONS

The original Pilot objective – to prove financial and operational benefits of recovering rigid plastic wide mouthed containers (deli, bakery, seafood pails/trays and prescription stock bottles) – was deemed a success by both chains, with full scale roll out of rigids recovery planned for expanded locations or groups of stores in 2012-13.

A. CHAINS A&B COMMONPILOTFINDINGS

Overall

- Average sized grocery stores (45,000-55,000 sq. ft.) generate a minimum of 40 pounds of wide mouthed rigid containers weekly with higher volume stores averaging 60 pounds or more. Upwards to double that volume can be achieved by including pharmacy bottles, narrow mouthed containers (frying oil jugs, miscellaneous bottles, plastic spools from registers, printers, etc., video case covers, and other growing amounts of miscellaneous rigid plastic packaging increasingly found in supermarket operations)
- Sustainable recovery and sorting of rigid plastic containers by size and color can be performed by store associates with minimal initial training and ongoing repetitive training
- Sorting by container size, single color, and similar resins can be accomplished; During the Pilot two resins #2 & #5 were combined in bins at store level.
- Pharmacy stock bottles represent at least 50% of rigid plastic recyclable waste, and most of pharmacy department waste.
- To assure no rigid container enters the waste stream, it is imperative to utilize a system of individual store accountability by tracking store numbers or use of a scanning system on bins returned
- In order to keep good market relationships, a consistent inspection process of material in bins is important. Before loading on trailers bound for market; feedback of specific concerns should be reported from the Recycling Center to the Store.
- Every container/cover collected & recycled contributes to lower waste disposal tons and cost.
- The more suppliers that convert to recyclable plastic packaging/shipping containers, the more value there will be on the recycling end for the retailer.

In-Store

- Cardboard (melon) bins are ideal and readily available for organizing in-store collection
- Training store associates requires less than an hour initially for leadership team, and only a few minutes per individual in each department
- Applying store numbers to each bin returned to recycling center can assure accountability
- Each store generates a consistent quantity of rigid plastics weekly – proportionate to store volume. Analyzing sales data for rigid plastic containers shipped into each store can help in projecting amount of containers, by weight, that should be recovered
- Nesting by size in tightly-packed and readily available melon bins is a most efficient in-store collection method;
- Minimal incremental labor was used to clean and stack containers as compared to the previous disposal procedure of placing in a compactor or dumpster.
- Stores with pharmacies realize higher disposal cost savings from recycling rigid plastics, since pharmacy bottles represents approximately 50%, by weight, of rigid plastics generated in each store.

- Potentially significantly higher volumes of material (mixed colored, jugs and various shaped plastic bottles, plastic register receipt spools, floral buckets, and other in-store-generated rigid plastics) could be added to rigid plastics recovery programs as a next phase opportunity

Recycling Center

- Tracking bins received from stores, by store number, assures store accountability for cleaning and stacking of rigid plastics.
- To optimize load weight, adding densely-baled recyclables (film plastics, OCC, pallets, etc.) is possible and generally allowable by end markets
- Effective training at store level makes handling at the Distribution/Recycling center more efficient
- It is slightly more advantageous in terms of weight (and potential revenue opportunity) to sort containers by resin type at the centralized recycling facility and then stack pails/trays on pallets. This additional sorting can result in better truckload density and lower transportation costs and assures higher material market value.
- Densely-packed, properly nested bins can be off loaded and reloaded on to dedicated trailer at the Distribution/Recycling Center
- Centralized baling, using high speed, high densification *horizontal balers*, could deliver incrementally greater market value (for plastics and other recyclables) at lower operational cost, including lower labor to load balers, smaller footprint=less space, higher value per truckload and less transportation cost.
- When sorting containers by resin type at both store and Recycling Center level, associates frequently encountered difficulty in distinguishing resin types caused by poor identification (coding) of resins 1-7. Specific coding issues include: lack of code on container bottoms; generally no coding of covers; high frequency of unreadable codes; and inconsistent location of codes on containers.
- There is opportunity for retail chains to allow other operators of recyclable plastics to include their rigids or other recyclable materials (such as Baled OCC, Baled Film Plastics, Baled Waxed OCC , Pallets and Mixed Office Paper) with the grocer loads to maximize efficiencies. (same as bullet #2?)

B. CHAIN A - PILOT FINDINGS

Overall

- Centralized baling of single or mixed rigid resins can be performed, with extra labor.
- Replacing down stroke balers with a single horizontal baler may likely save labor and space.
- Recovery of rigid plastic containers can enhance zero waste strategies

In-store

- Regular communications are necessary to assure container cleanliness, maximum bin weights, and sorting by size/material type.

Recycling Center

- To meet market demands, staging filled bins, either in designated storage racks for live loading or in dedicated onsite trailer appears essential. To meet minimum load weight specifications, other baled recyclables and/or pallets may be combined on loads of rigids.
- Culling out and disposing of containers improperly cleaned assures quality of rigid plastics being shipped to market .
- Baling of rigids centrally requires extra handling labor but can result in higher material value and lower trucking costs.

C. CHAIN B – PILOT FINDINGS

Overall

- Recovery of rigid plastic containers can be accomplished and result in new savings
- Centralized training by involving “Green Captains” is an effective training approach.
- Nesting containers compactly in dedicated bins - by container size, can be accomplished, with minimal ongoing training

•

In-store

- Initial concerns for clogged drains and grease traps, caused by emptying residual solids from containers to enable recycling, can be eliminated by wiping out residues (frostings, etc.) with paper towel or spatula.
- Use of a “drying rack” to allow rinsed containers to dry before nesting saves time and reduces odor.
- Loose, non-nesting rigid plastics (covers, pharmacy stock bottles) are best collected by using clear plastic utility bags. Full bags are placed on top of bins full of nested containers

Recycling Center

- Cross docking is a challenge without proper inspection for contamination/densification.
- Filled bins returned from stores can be immediately loaded on to dedicated trailer, with minimal handling to assure stacking trailer to maximum capacity.
- Due to limited space and need to speedily handle materials returned from stores, full bins need to be quickly reloaded to dedicated trailer, with no staging for inspection.
- With well-nested bins weighing of 80-90 pounds, a filled trailer averaging 70 bins will weigh approximately 6,000 pounds.

Both chains intend to move forward, post-Pilot, and roll out this program to more stores and eventually company wide within their respective banners. These chains are open to sharing their experience with the industry in forwarding the recycling of rigid plastics containers.