

Hello friends,

At the recycling event that was held this past week (6/24/2025) sponsored by the Town Run Watershed Group, I promised that I would send to attendees (and others who weren't able to attend the event because it was during the workday) a follow up email. But first I would like to express my appreciation to the speakers at the event (i.e., Rick Cooper – the manager of the Apple Valley Waste Recycling Center in Hagerstown, and Emily Whitacre – the outreach manager for the NexTrex recycling program out of Winchester), and to the Community Club for providing us with a venue. It was a very successful event, with large attendance and very useful information.

First, attached are the powerpoint files that Rick and Emily used in their presentations. We also recorded the event with a Zoom link; however, I am having difficulty accessing the file on that link. We may be able to send that out if we can resolve the technical issues.

Highlights - Here are some useful highlights from Rick's and Emily's presentations, and from my conversations with them before and following their talks.

1. Here's a link to the Apple Valley Recycling Center brochure, including its lists of acceptable and not accepted items.
<https://www.applevalleyrecyclingcenter.com/assets/docs/uploads/4/av-recycling-brochure-edited.pdf>
2. NexTrex has equivalent lists of acceptable and not accepted plastic film/bag wastes.
<https://nextrex.com/view/educate#:~:text=APPROVED%20ITEMS%20FOR%20NEXTREX%C2%AE,tear%20like%20paper?> Emily also made reference to Trex's annual sustainability report. The most recent posting that I could find is at: <https://www.trex.com/why-trex/sustainability/>
3. Material Recovery Facility (MRF) – Rick gave us a description of the process that is used at the Hagerstown MRF, which involves a complex series of material handling equipment (conveyors, screens, pneumatic sorters, etc.), including an initial manual (that is, human

beings) quality control sort to remove unacceptable items that are likely to cause problems in the facility. The end result of the process are bales of different materials that are then sold to other processors as commodities (e.g., mixed paper, cardboard, mixed plastics (1 thru 7), aluminum, mixed metal cans (i.e., tin coated steel cans), glass cullet.) A graphic of a typical MRF process is shown below (note the human sorters at the beginning of the process).

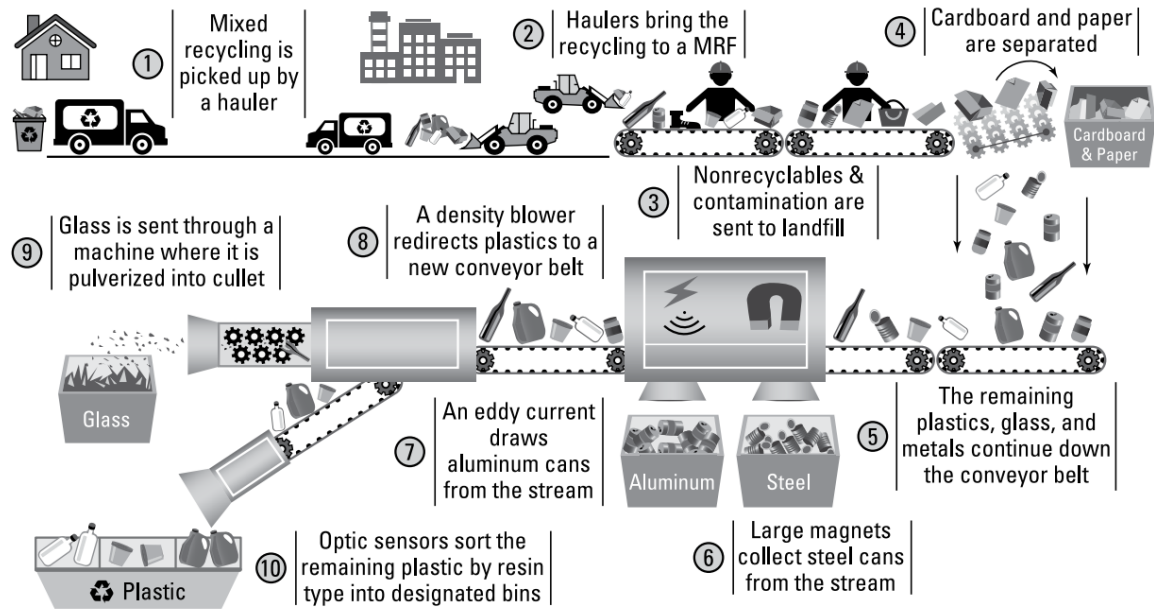


FIGURE 4-1: How a MRF separates recyclables.

Rick had given me a tour of the Hagerstown facility, which was very impressive. I can't show you that but here are two videos of similar MRF operations:

<https://www.youtube.com/watch?v=zN9BYsnVwHM>

<https://www.youtube.com/watch?v=M5nmNKNVCBw>

4. Plastics – As noted above, one of the Apple Valley MRF's products is mixed plastics (#1 thru #7). This is because their MRF is not equipped with the very expensive optical sorters needed to separate different plastic resins, so Apple Valley sells the mixed plastics to a subsequent specialty plastics recycler that does have this capability.

They don't ask folks to sort out their plastics (with some exceptions) because they believe that it is better to capture as much

of the plastic waste as they can. Rick then went on to describe the resin numbering system and which resins are practical to recycle versus those likely to be either landfilled or converted to fuel for cement kilns.

1. The PET (#1) resins used in plastic beverage bottles and other products is very recyclable, likewise the HDPE (high density polyethylene) resins (#2) that are often used in other containers.
2. PVC (#3) is often used in construction materials (like PVC pipe) (notably, NOT a single-use and throw away product), and are not accepted in most recycling programs. There is a concern that the chlorine component of PVC would be hazardous in a recycling process.
3. Low density polyethylene (LDPE, #4 resins) are not accepted at MRFs. These are typically plastic bags, and similar films, and pose a serious problem in MRFs as it can wrap around the pulleys and gears of the conveyors, causing an expensive halt to operations. Fortunately, this is exactly the kind of material that the NexTrex program wants in the process of manufacture of synthetic wood materials (decking, etc.) so this material can be taken to any grocery store for recycling. (MRFs also don't want other "wrap" problem materials like hoses, rope, wire, etc.

If you think about it you can probably surmise what material might likely cause a problem.)

4. Polypropylene (#5) is actually recyclable. However, it is often used in plastic food containers, and is often not cleaned. Food contamination would adulterate the product, making it unacceptable. Also, MRFs really don't want food waste, in an effort to minimize rat problems. You get the idea.
5. Polystyrene (#6) comes as Styrofoam or similar foam products (egg cartons, packing materials, etc.). The products are mostly air, and not worth recycling.
6. Number #7 refers to all miscellaneous plastic resins that aren't #1 thru #6, and don't get recycled.

7. Rick was going to show an informative NPR “video” that explains some of this in a bit more detail, but we ran out of time.

It’s worth viewing and can be found at:

<https://apps.npr.org/plastics-recycling/> (In some browsers, if you right-click on the PDF when it opens you can select a “read aloud” option, and the application will automatically cycle through with audio.)

5. Glass – You’ll notice in the process schematic above that there is a side stream for glass recovery. Actually, the Apple Valley facility does have this equipment also. However, they discourage glass in the “single stream” waste program because glass is very hard on their equipment. But some glass does get through so they are equipped to handle it. Fortunately, Shepherdstown has arranged for glass to be picked up here by another contractor and transported directly to a glass recycler where it does not have to go through the vulnerable materials handling equipment at a typical MRF.
6. Other miscellaneous highlights. I was planning on a “stump the chump” quiz (with me as the resident chump) to elicit Rick’s and Emily’s verdicts on some specific potentially problematic recycling materials. But it was getting long, so we deleted that from the program, but here are a few things that I learned.
 1. Take-out pizza boxes - NO!!! No recycling program wants your used greasy pizza boxes. They would contaminate an entire load of otherwise valuable paper or cardboard.
 2. Gable-top milk cartons - These coated cartons are found in the refrigeration section of the store for milk and eggs.

They typically have a plastic spout. Rick says that he can handle these cartons, but I find it easy to rip the plastic spout off so that it is a simple, single material.
 3. Aseptic “Tetra Pak” cartons – These cartons look very similar to the gable-top cartons above, but these cartons are found on the non-refrigerated shelves of the grocery store. They don’t have to be refrigerated because they

intermediate layers of aluminum and polyethylene inside the carton. The Tetra Pak packages have symbols on them that say they are recyclable; however, this is misleading. They are recyclable at centers that use fairly specialized hydro-pulping processes, but most recyclers do not have this. Rick advises that his facility and its customers cannot use these, so please don't put them in your bin.

4. Large plastic pails with metal wire bales. The #2 and #5 pails are recyclable, but first you have to remove the wire handle, because it would be a "wrap" problem for the machinery.

This may be difficult. If you can't remove it, then consign the unwanted pail to the trash.

5. Metal jar lids. I had thought these would not be recyclable because of the plastic layer; however, Rick told me that the process that the mixed metal recyclers use would just burn that off, so they are acceptable.
6. Plastic caps. Rick advised to leave the plastic caps on the bottles. The caps are recyclable, but if they are loose, they are so small they will not get properly sorted at the MRF.
7. Plastic or metal caps on glass bottles. Remember the glass bottles don't go in the single stream bins. They are picked up by Shepherdstown separately. But please remove the caps or other non glass materials to the extent that you can. The glass recyclers really only want glass. The other is contamination for their product. (But you don't have to worry about paper labels.)
8. There are a number of plastic bag types that NexTrex does not want. I used to send them plastic bags used for frozen food, but I found out from Emily that they can't use those materials. The resins in them melt at a different temperature than the LDPE (#4) bags that they want. Consult the list of "not accepted" items in the NexTrex website or Emily's presentation.
9. Cereal box liners ARE accepted by NexTrex. Consult that list also.

10. I used to send to Trex the plastic liners that are part of the cardboard wine containers; however, Emily educated me that these plastic liners are not the resin that they want, so I should just put them in the trash.
7. Breaking news. If you hung in on this extended email for this long (thank you), you'd probably be interested in this breaking news from this morning that Malaysia has banned import of plastic waste from the United States, because the United States has not ratified participation in the Basel Convention on international conveyance of hazardous waste materials. See more detail here:
<https://www.latimes.com/environment/story/2025-06-26/malaysia-bans-us-plastic-waste-what-will-california-do>

Thanks again for your participation. I hope that his supplement to the presentations on Tuesday is worth your read.

Greg Welter
Town Run Watershed Group