

Plastics Recycling

What can we recycle?

Department of Public Works and Environmental Services
Working for You!



A Fairfax County, VA, publication
March 29, 2018

Outline for discussion

- What happens after I put my recyclables at the curb?
- How is plastic processed for recycling?
- What can we do to recycle right?



Who picks up my recycling?

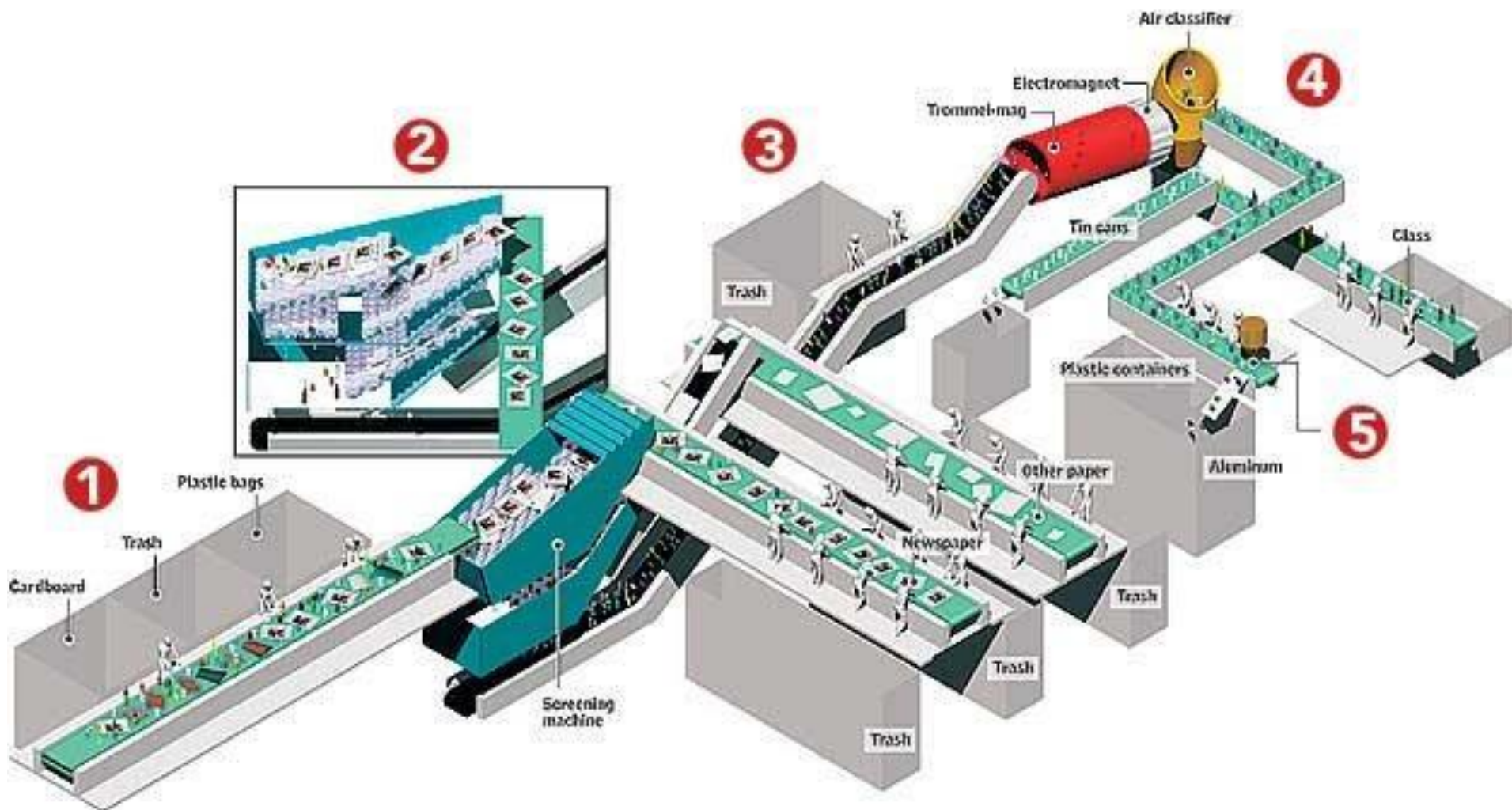
- 90% of households have a private collector pick up their trash and recyclables. **Fairfax County issues permits and monitors private haulers for compliance with the Solid Waste Code**
- 10 % of residents have their trash and recyclables collected by Fairfax County. **These service areas are called Sanitary Districts.**



Recyclables are dumped at the MRF



MRF operation



Sorting the recyclables



Baling the plastics



What is plastic?

- any synthetic or semi-synthetic organic polymer.
- always include carbon and hydrogen.
- may be made from just about any organic polymer, but most industrial plastic is made from petrochemicals.
- thermoplastics and thermosetting polymers are the two types of plastic.
- The name "plastic" refers to the property of plasticity, which is the ability to deform without breaking.
- almost always mixed with additives including colorants, plasticizers, stabilizers, fillers, and reinforcements.
- additives affect the chemical composition, chemical properties, and mechanical properties of a plastic and also affect its cost.

















Types of resin

- **Thermoplastic** resins can be repeatedly melted and solidified by heating and cooling and generally
 - no chemical change takes place during forming
 - impact resistant
 - can be recycled
 - Examples include PET plastic soda bottles, vinyl window frames, and plastic bags
- **Thermoset/Thermoform** plastics react during processing to form crosslinked structures that **cannot** be remelted and reprocessed
 - Low cost
 - Resistance to solvents and corrosives, heat and high temperatures
 - Examples include urethane, epoxy, and vinyl ester resin



Plastic Resin Identification Codes

 PETE	 HDPE	 PVC	 LDPE	 PP	 PS	 OTHER
Polyethylene Terephthalate	High-Density Polyethylene	Polyvinyl Chloride	Low-Density Polyethylene	Polypropylene	Polystyrene	Other
<p>Common products: to-go containers, cups, jars, trays, soda & water bottles</p> <p>Recycled products: clothing, carpet, clamshells, soda & water bottles</p> 	<p>Common products: grocery bags, milk jugs, flower pots, detergent & shampoo bottles</p> <p>Recycled products: detergent bottles, flower pots, crates, pipe, decking</p> 	<p>Common products: pipe, pool liners, siding, automotive product bottles, sheeting</p> <p>Recycled products: pipe, siding, binders, carpet backing, flooring</p> 	<p>Common products: bread bags, paper towel overwrap, squeeze bottles, trash bags</p> <p>Recycled products: trash bags, decking, furniture, shipping envelopes, compost bins</p> 	<p>Common products: yogurt tubs, cups, twine, straws, hangers, shipping bags, non-woven bags</p> <p>Recycled products: paint cans, speed bumps, auto parts, hangers, plant pots, toothbrush handles</p> 	<p>Common products: to-go containers, razor handles, flatware, CD cases, hot & cold cups, foam packing, trays, egg cartons</p> <p>Recycled products: picture frames, crown molding, rulers, flower pots, hangers, toys, tape dispensers</p> 	<p>Common types & products: polycarbonate, nylon, ABS, acrylic, PLA; multi-layer packaging, bottles, safety glasses, CDs, lenses, pouches</p> <p>Recycled products: electronic housings, auto parts</p> 

The RIC

- Developed by the Society of the Plastics Industry to help recycling facilities identify the plastics they were processing.
- Codes help recycling facilities collect, sort, and process higher volumes of plastic materials with greater accuracy.
- RICs look like the universal recycling symbol.
- Sending non-recyclable plastics to the MRF will increase sorting costs (only to be sent to landfill anyway).



How is it processed for recycling?

- sort the various items by their resin content
- next, the plastics are chopped up into small pieces and chunks
- pieces cleaned to further remove debris
- the plastic pieces are melted down and compressed into tiny pellets called nurdles
- the pellets are now ready to be used in the manufacture of new and completely different products






Color Matters

- Clear plastics are always preferred and have the highest material value.
- The next best is white - its only limit is that it cannot become clear.
- Colored plastics are limited to become darker shades of the original dye, or black.
- Some recycling facilities consider certain pigmented plastics **contaminants** Low oil prices impact plastics recycling



How 2 recycle

		Recycling
		
PAPER BOX	PLASTIC WRAP	PLASTIC TRAY

how2recycle.info


***Not recycled in**

It's the little things...

- Lids, caps, straws, and candy wrappers
- Multi-material products such as flexible packaging are difficult to recycle
- CDs, jewel cases, prescription bottles
- Bring your own refillable bottle or cup
- Put lids back on to recycle
- Say, “no straw please”
- Consider packaging when you make a purchase



Challenges to plastic recycling

- About 32 million tons of plastic waste is generated each year
 - Bags and tangles
 - Differences in material composition – “compostable plastics”
 - Clamshells made of a variety of materials – PET, polystyrene
- 
- 32 million tons is equal to 1,218,208,000,000 20-ounce PET water bottles
 - Take plastic bags and hangers back
 - For compostable plastics, look for the letters “PLA” below the No. 7. If the plastic is marked No. 7 and “Other,” do not throw it in the compost bin.



The National Sword



Other options

- Drop off locations at stores like Whole Foods and Mom's
- Repurpose or reuse
- Terra Cycle – items like break room waste, art supplies, cigarettes, juice pouches, flip-flops



TerraCycle has created a zero waste solution for break room waste. Use this box to recycle any items used in the break room including plastic packaging, coffee capsules and disposable cutlery.

Small box	Medium box	Large box
\$110.00	\$209.00	\$352.00

[BUY NOW](#)



Additional Information

For additional information, please contact

Erica Carter

703-324-5230

Erica.carter@fairfaxcounty.gov

www.fairfaxcounty.gov/publicworks

