



# The State of Recycling in Hampton Roads

White Paper produced by the  
askHRgreen.org Recycling & Beautification Committee

# Background

- Comprehensive “point-in-time” look at recycling in the region
- Intended for a variety of audiences
- Compiled data from various sources, including:
  - 2013 Hampton Roads municipal curbside recycling survey
  - 2012 Hampton Roads residential online survey
  - SERDC
  - VDEQ
  - Bureau of Labor
  - National Waste and Recycling Association

# Inside the Report

- History of recycling in the region
- Types of recycling programs available
- Jobs associated with the industry
- Examples of local recycling companies
- “Snapshot” of residential recycling programs
- Residential recycling perceptions & behaviors
- The business of recycling – manufacturers & de-manufacturers
- National and regional initiatives of note
- Summary & goals



# Inside the Report

- 20 pages
- Easy to read
- Engaging graphics

### A CLOSER LOOK: WHAT DO RESIDENTS REPORT?

ASKHGREEN.ORG 2012 ONLINE SURVEY

What do Hampton Roads residents report about their own recycling? According to an askHgreen.org 2012 Online Survey™, the results show that residents believe they are recycling, but curbside recycling data across Hampton Roads municipalities show that residents:

- Are confused about what is recyclable
- 36.8 percent of the survey respondents reported that the materials in their trash are not recyclable.
- Of the respondents who said they have access to residential curbside recycling, only 32.8 percent recycled regularly.
- The most common and influential reasons for not recycling items are recyclable.
- The 2012 survey revealed that Hampton Roads residents do not recycle on a regular basis.
- The most common reason cited for not recycling is unclear.

This is consistent with the findings of recycling audits conducted by Hampton Roads. Recycling is good for the environment and the economy.

### THE CURBSIDE RECYCLING CYCLE

- A recycling truck picks up recyclables from your curbside containers.
- The truck proceeds to the warehouse, where the contents are dumped on the tipping floor. A MRF inspector views the contents to make sure the load doesn't contain organic matter, trash or household hazardous wastes.
- At the end of the trip, the driver takes the contents to a Materials Recovery Facility (MRF) where the truck is weighed on arrival.
- The contents are then loaded onto a line where they are automatically mechanically and by humans.
- The materials are then sorted by commodity and stored until the MRF has enough for a truckload, which typically contains 40,000 pounds of material.
- The truckload is then sold to a domestic manufacturer or exported to a mill in a foreign country.

**In Hampton Roads, Jobs associated with the recycling industry include:**

- Solid Waste/Recycling Haulers**, the companies that collect recyclables to facilities for sorting and processing.
- Materials Recovery Facilities (MRFs)**, these are the private companies that process recyclables, and then sell the raw materials to manufacturers, jobs mechanics, technicians, machinery maintenance workers, material recovery representatives. In some cases, the hauler and MRF are the same company.
- De-Manufacturers**, businesses and non-profit organizations that hire recyclers to process materials that are unusable by manufacturers.
- Beneficiaries**, the businesses that take separated materials and further process them to produce materials that are usable by manufacturers.
- Reclaimers**, companies that collect the materials to sell to wholesalers.
- Manufacturers**, the businesses that use raw recycled materials (plastic, paper, etc.) to produce new consumer goods such as beverage containers, notebook paper and more.
- Municipal Government**, Local government employs managers and staff responsible for recycling and beautification programs, as well as provide jobs for drivers, employees responsible for collecting and transporting recyclables to the MRF. In many cases an enterprise fund is established by the government to pay for the recycling program. This fund usually provides a revenue stream similar to private business enterprises. This fund usually provides a revenue stream similar to private business enterprises. This fund usually provides a revenue stream similar to private business enterprises.

**Future growth in the recycling industry depends on support from the community.**

### RECYCLING BASICS

You've seen the numbers on the bottoms of plastic bottles, milk jugs, yogurt cups and carry-out containers, but what do they mean? We've de-coded it for you in this graphic of residential recyclables, explaining where they're found and what they can become if recycled. Not all are collected in Hampton Roads, though. For more information specific to your community visit [askHgreen.org](http://askHgreen.org).

<p><b># 1 PET OR PETE</b> (polyethylene terephthalate)</p> <p><b>FOUND IN:</b> Soft drink, water and beer bottles, mouthwash bottles, peanut butter containers, salad dressing and vegetable oil containers, reusable food trays.</p> <p><b>RECYCLING:</b> Most curbside recycling programs.</p> <p><b>RECYCLED INTO:</b> Fiber, fleece, floor, tote bags, furniture carpet, paneling, chairs and occasionally new containers.</p>	<p><b># 2 HDPE</b> (high-density polyethylene plastic)</p> <p><b>FOUND IN:</b> Milk jugs, juice bottles, bleach/household cleaners, butter/yogurt tubs, cereal box liners, shampoo bottles, etc.</p> <p><b>RECYCLING:</b> Most curbside recycling programs.</p> <p><b>RECYCLED INTO:</b> Laundry detergent bottles, oil bottles, jugs, recycling containers, floor tile, drainage pipe, lumber, benches, doghouses, picnic tables and fencing.</p>
<p><b># 3 V</b> (vinyl or PVC)</p> <p><b>FOUND IN:</b> Window cleaner and detergent bottles, shampoo bottles, cooking oil bottles, clear food packaging like jockeying, medical equipment, siding, window, piping.</p> <p><b>RECYCLING:</b> Rarely recycled; accepted by some plastic lumber makers.</p> <p><b>RECYCLED INTO:</b> Decks, paneling, mulch, roadway gutters, flooring, cables, speed bumps and mats.</p>	<p><b># 4 LDPE</b> (low-density polyethylene plastic)</p> <p><b>FOUND IN:</b> Squeezable bottles, beach/beach foods, dry cleaner/plastic clothing bags, furniture, carpet, clothing.</p> <p><b>RECYCLING:</b> Rarely recycled through curbside programs. Plastic shopping bags can be returned to many stores for recycling.</p> <p><b>RECYCLED INTO:</b> Mesh can liners &amp; cans, computer bins, shipping envelopes, paneling, lumber, landscaping timbers &amp; floor tile.</p>
<p><b># 5 PP</b> (polypropylene)</p> <p><b>FOUND IN:</b> Some yogurt containers, syrup bottles, ketchup bottles, caps, shoe, medicine bottles.</p> <p><b>RECYCLING:</b> Some curbside programs.</p> <p><b>RECYCLED INTO:</b> Signal lights, battery cases, brooms, brushes, auto battery cases, ice scrapers, landscape borders, bicycle racks, rakes, bins, pallets and trays.</p>	<p><b># 6 PS</b> (polystyrene/styrofoam)</p> <p><b>FOUND IN:</b> Styrofoam plates and cups, meat trays, egg cartons, carry-out containers, agricultural covers, ice chests.</p> <p><b>RECYCLING:</b> Some curbside programs.</p> <p><b>RECYCLED INTO:</b> Insulation, light weight plastics, egg cartons, vents, covers, home parking and carry-out containers.</p>
<p><b># 7 MISCELLANEOUS</b></p> <p><b>FOUND IN:</b> 2- and 3-gallon water bottles, bullet-proof materials, sunglasses, DVDs, iPod and computer cases, signs and displays, certain food containers, cups.</p> <p><b>RECYCLING:</b> Rarely recycled through curbside programs.</p> <p><b>RECYCLED INTO:</b> Plastic lumber and custom-made products.</p>	<p><b>Aluminum</b> can be made into new cans and aluminum products. The steel can be made into new steel frames.</p> <p><b>Newsprint</b> can be made into paper towels, napkins, toilet paper. Every time you recycle paper, the fiber content is downgraded.</p> <p><b>Cardboard</b> can be made into new cardboard.</p> <p><b>Glass bottles and jars</b> are 100% recyclable and can be recycled endlessly without a loss in quality.</p>



- MOST REGIONAL MUNICIPALITIES ACCEPT:**
- aluminum, steel and tin cans
  - clean plastic bottles and jugs with neck or pour spouts
  - glass bottles and jars
  - mixed paper
  - empty food boxes and cardboard

## A CLOSER LOOK: WHAT DO RESIDENTS REPORT? ASKHRGREEN.ORG 2012 ONLINE SURVEY

What do Hampton Roads residents report about their own recycling habits? According to an askHRgreen.org 2012 Online Survey<sup>10</sup>, the region's residents believe they are recycling, but curbside recycling data available from Hampton Roads municipalities show that residents:



Are confused about what is recyclable



Could be recycling more

In the fall of 2012, askHRgreen.org conducted an online survey to see how the askHRgreen.org environmental education and outreach campaign was performing. Four hundred residents of Hampton Roads participated in an online survey, conducted by EAB Research. The results revealed that the campaign is successfully changing behaviors in some areas, but there is still work to be done. Specific to recycling, findings included:



**36.8 percent of the survey respondents reported that they place recyclable materials in their trash.** More than one-third of those surveyed said they did not believe placing recyclables in the trash is harmful to the environment.



**Of the respondents who said they have access to residential curbside recycling,** about 95 percent said they recycle regularly. Of the respondents who said they do not have access to curbside recycling, only 32.8 percent recycled regularly.



**The most common and influential reasons for not recycling are uncertainty of which items are recyclable,** no access to curbside recycling and the container filling up too quickly.

**The 2012 survey revealed that Hampton Roads residents believe they recycle on a regular basis.** However, municipal set-out rates do not support this claim. Set-out rates are the actual number of households that set out a recycling container for collection. Regional set-out rates in Hampton Roads range from 35-50 percent, based on a sampling of Hampton Roads cities and counties with Radio Frequency Identification Data tracking systems. Municipal set-out rates show a large difference between what people think they are doing versus what they are actually doing.

**The most common reason cited for not recycling is uncertainty of which items are recyclable.**

This is consistent with the findings of recycling audits conducted by Hampton Roads localities. It is also consistent with the results of the 2014 National Recycling Survey<sup>11</sup> from the National Waste and Recycling



Recycling programs help municipalities operate more efficiently by reducing solid waste disposal fees and cutting back on the need to expand and build landfills (an expensive undertaking). At the same time, recycling supports and creates local jobs and produces economic development opportunities. The Southeast Recycling Development Council (SERDC) is a non-profit organization represented by 11 southern states, including Virginia. In a 2010 study<sup>7</sup>, the group determined that Virginia is home to more than 15 manufacturers that rely on materials generated by recycling programs. These companies produce more than \$3.6 billion in annual sales and employ more than 3,700 Virginians directly in the manufacture of recycled content products.

### **In Hampton Roads, jobs associated with the recycling industry<sup>2</sup> are represented by:**

**Solid Waste/Recycling Haulers**, the companies that collect recyclables and transport the materials to facilities for sorting and processing.



**Materials Recovery Facilities (MRFs)**. These are the private companies that accept, sort and process recyclables, and then sell the raw materials to manufacturers. Jobs include drivers, sorters, mechanics, technicians, machinery maintenance workers, material recovery facility managers and sales representatives. In some cases, the hauler and MRF are the same company.



**De-Manufacturers**, businesses and non-profit organizations that hire employees to break down recycled goods, such as electronics, into smaller components that are then sold to manufacturers to repurpose or make new products.



**Beneficiators**, the businesses that take separated materials and further process them via grinding and pelletizing to produce materials that are usable by manufacturers.



**Reclaimers**, companies that collect the materials to sell to wholesalers.



**Manufacturers**, the businesses that use raw recycled materials (plastic, glass, metal and paper) to make new consumer goods such as beverage containers, notebook paper and much more.

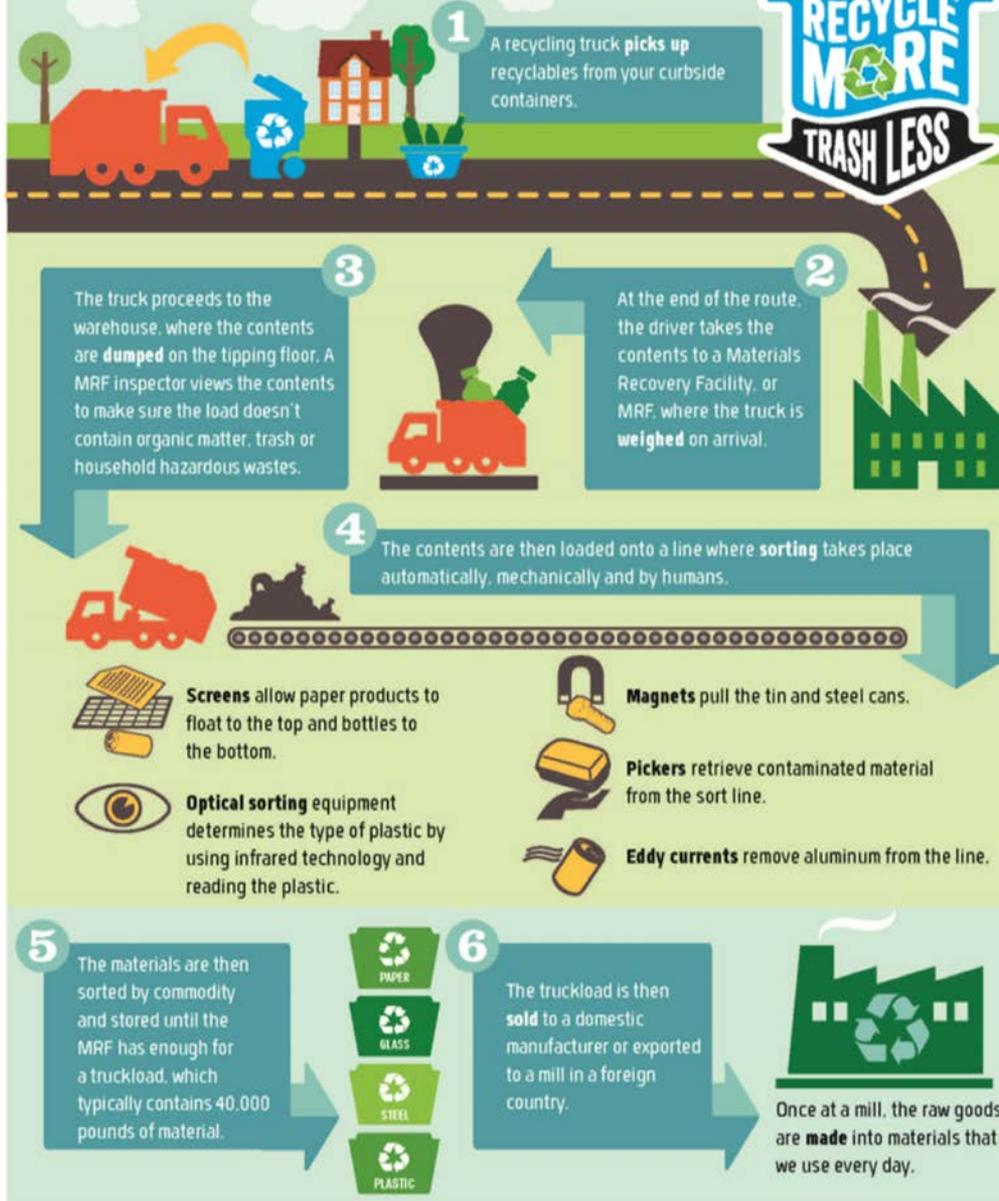


**Municipal Government**. Local government employs managers and staff who oversee city/county recycling and beautification programs, as well as provide jobs for drivers, route managers and other employees responsible for collecting and transporting recyclables to the materials recovery facilities. These jobs are especially beneficial to cities and counties if they are underwritten by a government enterprise fund. In many cases an enterprise fund<sup>8</sup> is established by the government to account for operations in a manner similar to private business enterprises. This fund usually provides goods or services to the public for a fee that makes the entity self-supporting.

### **Future growth in the recycling industry depends on supply assurance.**

So the next time you are thinking about tossing a soda can, newspaper or plastic bottle in the trash, think again. Recycling is good for the environment and the economy.

# THE CURBSIDE RECYCLING CYCLE



# RECYCLING BASICS



You've seen the numbers on the bottoms of plastic bottles, milk jugs, yogurt cups and carry-out containers, but what do they mean? We've de-coded it for you in this graphic of residential recyclables, explaining where they're found and what they can become if recycled. Not all are collected in Hampton Roads, though. For more information specific to your community visit [askHRgreen.org](http://askHRgreen.org).

## MOST REGIONAL MUNICIPALITIES ACCEPT:

- aluminum, steel and tin cans
- clean plastic bottles and jugs with neck or pour spouts
- glass bottles and jars
- mixed paper
- empty food boxes and cardboard



PETE

### # 1 PET OR PETE (polyethylene terephthalate)

**FOUND IN:** Soft drink, water and beer bottles, mouthwash bottles, peanut butter containers, salad dressing and vegetable oil containers, ovenable food trays.

**RECYCLING:** Most curbside recycling programs.

**RECYCLED INTO:** Polar fleece, fiber, tote bags, furniture, carpet, paneling, straps and occasionally new containers.



HDPE

### # 2 HDPE (high-density polyethylene plastics)

**FOUND IN:** Milk jugs, juice bottles, bleach/household cleaners, butter/yogurt tubs, cereal box liners, shampoo bottles, etc.

**RECYCLING:** Most curbside recycling programs.

**RECYCLED INTO:** Laundry detergent bottles, oil bottles, pens, recycling containers, floor tile, drainage pipe, lumber, benches, doghouses, picnic tables and fencing.



V

### # 3 V (vinyl or PVC)

**FOUND IN:** Window cleaner and detergent bottles, shampoo bottles, cooking oil bottles, clear food packaging, wire jacketing, medical equipment, siding, windows, piping.

**RECYCLING:** Rarely recycled; accepted by some plastic lumber makers.

**RECYCLED INTO:** Decks, paneling, mudflaps, roadway gutters, flooring, cables, speed bumps and mats.



LDPE

### # 4 LDPE (low-density polyethylene plastics)

**FOUND IN:** Squeezable bottles, bread/frozen foods, dry cleaner/plastic shopping bags, furniture, carpet, clothing.

**RECYCLING:** Rarely recycled through curbside programs. Plastic shopping bags can be returned to many stores for recycling.

**RECYCLED INTO:** Trash can liners & cans, compost bins, shipping envelopes, paneling, lumber, landscaping ties & floor tile.



PP

### # 5 PP (polypropylene)

**FOUND IN:** Some yogurt containers, syrup bottles, ketchup bottles, caps, straws, medicine bottles.

**RECYCLING:** Some curbside programs.

**RECYCLED INTO:** Signal lights, battery cables, brooms, brushes, auto battery cases, ice scrapers, landscape borders, bicycle racks, rakes, bins, pallets and trays.



PS

### # 6 PS (polystyrene/styrofoam)

**FOUND IN:** Disposable plates and cups, meat trays, egg cartons, carry-out containers, aspirin bottles, cd cases.

**RECYCLING:** Some curbside programs.

**RECYCLED INTO:** Insulation, light switch plates, egg cartons, vents, rulers, foam packing and carry-out containers.



OTHER

### # 7 MISCELLANEOUS

**FOUND IN:** 3- and 5-gallon water bottles, bullet-proof materials, sunglasses, DVDs, iPod and computer cases, signs and displays, certain food containers, nylon.

**RECYCLING:** Rarely recycled through curbside programs.

**RECYCLED INTO:** Plastic lumber and custom-made products.



**Aluminum** can be made into new cans and aluminum products.

**Tin, Steel** can be made into steel frames.

**Newspaper** can be made into paper towels, napkins, toilet paper. Every time you recycle paper, the fiber content is downgraded.

**Cardboard** can be made into new cardboard.

**Glass bottles** and jars are 100% recyclable and can be recycled endlessly without a loss in quality.

# Conclusions

- Recycling is an economic driver in the region
- The recycling industry is ever-changing
- Hampton Roads has come a long way but there is plenty of room for growth
- Education & outreach is needed to increase and improve participation

# Using the White Paper

- Tool for outreach efforts
  - Elected officials, govt leaders, civic leagues, schools, the media, etc.
- Locality-specific recycling info can accompany the regional publication
- Graphics and data can be repurposed
- Living document to be updated as programs change
- Available for download at [askHRgreen.org](http://askHRgreen.org)
  - <http://askhrgreen.org/wp-content/uploads/2014/11/askHRgreen-CurbsideRecycling.pdf>