



THE STATE OF RECYCLING IN HAMPTON ROADS

NOVEMBER 1, 2014

PRODUCED BY ASKHRGREEN.ORG AND ITS RECYCLING
& BEAUTIFICATION COMMITTEE



Encouraging environmental stewardship among residents throughout Hampton Roads, askHRgreen.org is a region-wide public awareness and education campaign administered through the Hampton Roads Planning District Commission and powered by the following members:

The cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Smithfield, Suffolk, Virginia Beach, and Williamsburg; the counties of Gloucester, Isle of Wight, James City, Southampton, Surry and York; and HRSD.

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INTRODUCTION

This report was developed by askHRgreen.org to provide an overview of recycling in Hampton Roads—from the municipalities that provide the service for its residents to the businesses that collect, sort and re-sell the recyclables. It also includes information on Virginia manufacturers that buy and use the raw materials, while providing insight into the jobs created, economic impact, recycling success stories and trends both on the regional and national level.

To determine how curbside recycling programs in particular are conducted among the municipalities in Hampton Roads, along with information about which items are collected, pickup schedules, success stories and deterrents to recycling, askHRgreen.org conducted a curbside recycling survey of Hampton Roads municipalities in the fall of 2013. In addition, askHRgreen.org reviewed studies and online resources developed by the Bureau of Labor, Southeast Recycling Development Council and the Virginia Department of Environmental Quality, among other sources.

"The State of Recycling in Hampton Roads" is intended for the region's elected officials, city government leaders, civic leagues, neighborhood and homeowners associations, environmental organizations and the media. This is the first time a report of this kind has been published. In addition to providing a "point-in-time" look at recycling, the report was developed to inform these audiences of the benefits and challenges of curbside recycling in Hampton Roads, recycling trends and the potential for growth.

A CLOSER LOOK: TYPES OF RECYCLING PROGRAMS

Recycling is the process that allows waste to be reused as the base material for new products. The first step in the recycling process is the collection of recyclable materials from consumers who need to dispose of waste materials. In Hampton Roads, consumers may have access to a variety of services including residential curbside recycling, residential drop-off recycling centers, plastic bag recycling and scrap metal recycling. These services make it convenient to divert waste materials away from landfills and into the recycling stream. This reduces municipal disposal costs and allows waste to have a second life as a new product.

Recycling collection in Hampton Roads is accomplished through these programs:



Residential Curbside Recycling Programs

Residents collect those materials accepted by their locality's recycling program in a container for storage until pickup. Much like typical trash collection, the recycling container is set out at the curb on designated days for pickup by a hauler. Curbside recycling is the easy and convenient way for consumers to divert waste into a recycling program, but may not be offered in every community or to every household in a community. Materials accepted by curbside recycling differ by locality.



Residential Drop-off Recycling Centers

Residents transport recyclable items to a central location for collection. Drop-off recycling centers are often used by localities with no curbside recycling program. However, even if a locality offers curbside recycling, it probably has drop-off locations as well. Drop-off recycling centers may serve as a means for collecting materials not accepted in the curbside recycling program and often provide a means of recycling for households not covered by the curbside program (i.e. apartments, condominiums, etc.). Examples of materials accepted at drop-off centers and not in curbside containers include household hazardous waste, batteries, yard waste and electronics. The materials that are accepted differ based on locality contracts and recycling programs.



Recycling Events

Municipalities throughout the region host a number of recycling events specific to electronics, household hazardous waste and document shredding.



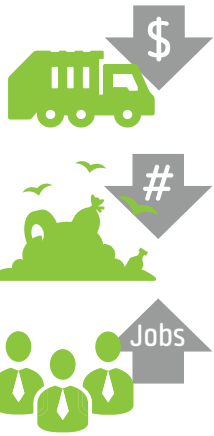
Plastic Bag Recycling

Drop-off locations for plastic bag recycling are located in area grocery stores and other businesses.

WHY RECYCLING IS GOOD FOR HAMPTON ROADS

The plastic bottle you are about to throw out with the trash could help reduce energy consumption, decrease pollution and save our natural resources—if it were placed in a recycling container instead.

Recycling is good for the environment, but did you know that it is good for the Hampton Roads economy as well?



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 study¹, 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 industry² 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 fund³ 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.

A CLOSER LOOK: THE RECYCLING COMPANIES THAT SERVE OUR REGION

Haulers, material recovery facilities (MRFs), beneficiators and reclaimers work to collect, separate and convert recyclable materials into raw materials that are used to produce new products. The materials these companies pick up are determined by both the value of the material and how easy it is to process. The higher the commodity price, the more likely a MRF or beneficiator will be to accept the material for recycling. International and national markets drive the value of the material and the entire recycling process. As material use and technology change, the materials recovered through recycling programs will continue to evolve.

Examples of some of these businesses and organizations that serve the region appear below:

Local Haulers:

AVES (serving Smithfield)
Bay Disposal & Recycling (serving Hampton Roads)
County Waste (serving Peninsula)
Republic Services (serving Peninsula)
TFC Recycling (serving Hampton Roads)
Waste Industries (serving Hampton Roads)
Waste Management Inc. (national company, serving Hampton Roads)

Local MRFs:

Bay Disposal & Recycling (serving Hampton Roads)
RDS (serving Hampton Roads and Roanoke)
SB Cox (specializing in demolition debris, serving Yorktown)
TFC Recycling (serving Hampton Roads)
Tidewater Green (specializing in construction debris, serving South Hampton Roads)

Non-Traditional MRFs:

Disabled American Veterans Thrift Stores (serving Hampton Roads)
Goodwill Industries (serving Hampton Roads)

Local Beneficiators:

Boomerang Recovery (Virginia Beach)
SB Cox (Yorktown)
Sonoco (Hartsville, SC headquarters; consumer operation in Suffolk)
Tidewater Green (serving South Hampton Roads)

Reclaimers:

Empire Recycling (Norfolk)
Guttermann Iron and Metal (Norfolk)
Old Dominion Metals (Hampton)
Public Scrap Inc. (Hampton)
Scrap 58 Inc. (Chesapeake)
Sims Metal Management (Chesapeake)

THE CURBSIDE RECYCLING CYCLE



1

A recycling truck **picks up** recyclables from your curbside containers.

3

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.

2

At the end of the route, the driver takes the contents to a Materials Recovery Facility, or MRF, where the truck is **weighed** on arrival.

4

The contents are then loaded onto a line where **sorting** takes place automatically, mechanically and by humans.



Screens allow paper products to float to the top and bottles to the bottom.



Optical sorting equipment determines the type of plastic by using infrared technology and reading the plastic.



Magnets pull the tin and steel cans.



Pickers retrieve contaminated material from the sort line.



Eddy currents remove aluminum from the line.

5

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.



6

The truckload is then **sold** to a domestic manufacturer or exported to a mill in a foreign country.



Once at a mill, the raw goods are **made** into materials that we use every day.

THE HISTORY OF CURBSIDE RECYCLING IN HAMPTON ROADS

The first Hampton Roads curbside recycling programs were launched in the early-to-mid 1980s. According to a 2013 Curbside Recycling Survey⁴ of regional municipalities conducted by askHRgreen.org, Chesapeake and Newport News were the first cities to roll out their programs in 1985, followed by Hampton, Norfolk and Smithfield/Isle of Wight County in 1989. Other cities and counties followed.

These early curbside recycling programs began in anticipation of a 1989 Virginia Department of Environmental Quality⁵ mandate that each city, county, town or regional authority would be required to establish recycling programs that would meet or exceed a recycling goal of 25 percent of municipal solid waste generated. The Virginia General Assembly adopted legislation to this effect the same year. Legislation was modified in 2006. Localities or solid waste planning units with lower population densities were charged with meeting 15 percent of municipal waste generated. More populous localities were required to meet 25 percent.

In addition to complying with the emerging state mandate, Hampton Roads cities and counties were interested in starting curbside recycling programs for others reasons, according to the askHRgreen.org 2013 Curbside Recycling Survey⁶. Some survey participants said they began the program as a cost saving measure, to reduce solid waste collections, improve the cleanliness of the city or county and because it was good for the environment. In a few municipalities, residents requested curbside recycling, and local governments complied. Today, 14 of the 16⁷ Hampton Roads cities and counties offer curbside recycling programs for residents. Presently, Gloucester and Surry counties do not operate curbside recycling programs, but do operate several residential drop-off recycling centers.

A CLOSER LOOK: VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY ANNUAL RECYCLING RATE

The Virginia Department of Environmental Quality⁸ requires cities and counties in the Commonwealth to report on their recycling programs on a regular basis. Solid waste planning units in communities with a population over 100,000 are required to report annually, while smaller communities are required to report every four years. The report details all materials recycled in all programs, including material from residents, municipal buildings, public areas, schools, businesses and industrial sources. Based on this information, Virginia's recycling rate for 2012 (the most recent data available for this report) was 41.2 percent. This summary report was compiled from the recycling data submitted by the 71 solid waste planning units for 2012. The report represents materials collected from all recycling programs including curbside, yard waste, asphalt, junk car collections and other programs. All but one of the solid waste planning units met or exceeded their respective required recycling rates in 2012.

The highest recycling rates were found in the state's urban areas, including the Hampton Roads region.

THE CURRENT RECYCLING PICTURE IN HAMPTON ROADS

In 2013, askHRgreen.org conducted a Curbside Recycling Survey⁹ among the 16 Hampton Roads cities and counties. A total of 14 municipalities responded to the survey. Of the 14 respondents*, 12 offer residential curbside recycling programs. The information provided by the 12 municipalities makes up the data compiled for the survey results. It's important to note that residential recycling programs change frequently. These survey results present a snapshot of residential recycling programs in Hampton Roads as they were at the end of 2013.

The complete survey results appear on page 16 of this report. Highlights include:



The number of households served by curbside recycling programs range from 2,972 (Smithfield/Isle of Wight County) to 124,649 (Virginia Beach). Some municipalities (6) said their curbside recycling programs include multi-family dwellings, such as apartments, condos, trailer homes, duplexes and townhomes.



The size of the containers range from 18-gallon bins to 95-gallon carts, and all survey participants said their city/county accepts: paper, paper products, aluminum/tin, glass and plastic bottles/jugs. In addition, 5 survey participants said their municipalities accept plastic tubs, such as yogurt and margarine containers.



Regarding pickup schedules, 4 municipalities offer curbside recycling weekly, 7 offer it every other week and 1 picks up bins weekly and automated carts every other week.



Typically, there are 1-2 dedicated municipal employees who are responsible for making residents aware of its curbside recycling program. Some have 4 or more, including customer service representatives.



A variety of media is used to build local awareness, including direct mail, fliers, newsletters, media coverage, paid ads, social media and municipal websites/TV, in addition to participation in outreach events. Promotional budgets range from \$0 to \$10,000.



Funding for municipal curbside recycling programs comes from the city/county enterprise fund (7) or the general fund (5).



Most participants (11) said that residential curbside recycling has been well received.

But there are challenges associated with the program including:

- Contamination due to residents not being fully aware of what should and should not be put in cart
- Limits on the materials that can be collected for recycling
- High level of transiency of residents and rental occupants
- Apathy or other behavioral inertia among a percentage of residential population
- Changing the behavior of non-recyclers
- Educating decision makers on best practices to increase efficiencies of current collection operations
- Getting residents to know their recycling collection schedule
- Costs/funding associated with the program

*The 12 municipalities that participated in the survey included: Chesapeake, Hampton, James City County, Newport News, Norfolk, Poquoson, Portsmouth, Smithfield/Isle of Wight, Suffolk, Virginia Beach, Williamsburg and York County. Gloucester and Surry counties replied that they do not offer curbside recycling programs at this time, but do operate several residential convenience centers.

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.

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



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.



#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.



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.



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.



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.



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.



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.

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 Survey¹⁰, the region's residents believe they are recycling, but curbside recycling data available from Hampton Roads municipalities show that residents:

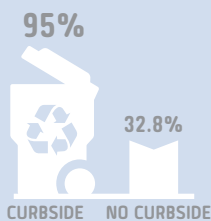


Are confused about what
is recyclable



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 Survey¹¹ from the National Waste and Recycling



Association. This survey revealed that 1 in 3 Americans do not know what items are accepted in their curbside recycling container. Of particular confusion is the plastic bag. Thirty-nine percent of Americans believe that plastic bags can be accepted through curbside recycling programs, when in reality they are only acceptable through take-back programs at local grocery stores and retailers. The survey also revealed that 1 in 10 Americans have placed trash in their recycling container because their trash can was full.

As next steps, residents need to “know before they throw” and have a thorough understanding of which materials go into the recycling containers and, just as importantly, which materials do not. Residents also need to be educated about the importance of recycling because of environmental and economic benefits. Because curbside recycling is the most popular method of recycling, those without access are an untapped resource. The expansion of residential curbside recycling programs can have a significant impact on improving recycling rates in Hampton Roads.

A CLOSER LOOK: HOW SUCCESSFUL IS YOUR RECYCLING PROGRAM?

So how do you determine if a recycling program is successful—or not? Some Hampton Roads municipalities conduct a recycling audit as a way to measure the program’s progress and identify opportunities for making it more successful, such as beefing up custodial training or educating the general public about what’s recyclable and what’s not. First, a truck full of materials collected through the curbside recycling program has its contents weighed and dumped onto the floor. Next, the individual commodities are sorted and separated out—glass, plastic, aluminum, cardboard, etc. What’s left over—the residual items that are not recyclable—are then weighed. Divide the weight of the residual by the initial weight of the load to get the percentage of trash for that container. The lower the percentage of trash, the better the recycling program is performing. A sampling of regional recycling audits reveal an average contamination rate of 18 percent of total weight collected.

THE BUSINESS OF RECYCLING **The Manufacturers**

The tagline for The North Face® brand is “Never Stop Exploring™.” Since 1966, the company has introduced consumers to the outdoor adventure lifestyle through its wildly popular line of apparel and outerwear. The same tagline could apply to the company’s commitment to sustainability. Through innovative production developments, The North Face incorporates recycled content into many of its products. The polyester fibers in its line of Denali jackets is made from plastic bottles—58.5 bottles to be exact for each men’s jacket, and 47 bottles for each women’s jacket. The company features a PVC-free footwear, including a flip flop that is made from 100 percent recycled PET.

In the company’s 2011 Sustainability Report Update¹², Adam Mott, corporate sustainability manager, explained, “We incorporate recycled content into many of our products to help prevent the flow of waste to landfills and to reduce the need to extract natural resources from the earth.” He went on to say, “Starting deep in the supply chain, we develop about 1,000 materials each year and try to achieve the greatest

environmental gains possible. Our entire line of products using Polartec® recycled fleece kept over 49,000 plastic bottles from landfills in 2010.”

The more fleece jackets The North Face sells, the more PET plastics it needs to produce the products—benefiting The North Face, the MRFs that sell the raw goods, the haulers that pick up the plastic bottles, the municipalities that manage and promote the recycling programs and all the people along the way who are employed by these processes.



Recycling Manufacturers in Virginia

Getting more recycled goods to the recycling manufacturers—and educating the public about the economic benefits—is what the Southeast Recycling Development Council (SERDC) is all about. The non-profit organization is represented by 11 southern states, including Virginia. According to a 2010 study¹³, the group found that over 200 southeastern manufacturers use recycled materials to make new consumer products. In Virginia alone, there are more than 15 manufacturers that rely on the materials residents place in their recycling containers to make new glass, paper, plastic and steel products. These businesses collectively employ more than 3,700 Virginians directly in the manufacture of recycled content products and generate more than \$3.6 billion in annual sales.



Virginia's Recycling Rock Stars

Perhaps you've seen those free-standing cardboard retail displays, featuring everything from batteries to razors. There's a good chance these were made from recycled paper products at the Rock Tenn¹⁴ plant in West Point, Va. Based in Norcross, Ga., Rock Tenn is a leading point-of-purchase display company in the United States. In addition to producing corrugated and consumer packaging, the company uses techniques that require less material, including plastic "clamshell" packaging. According to the SERDC website, Rock Tenn employs 600 people in Virginia and generates \$190 million a year.

Nearly 170 miles northwest of West Point in Winchester, Va., 118 people report to work at Trex^{® 15}, one of the nation's largest manufacturers of polyethylene terephthalate (PET or PETE) plastics. Since 1996, Trex has used plastic shopping bags, cereal box liners and paper towel wrappers to make composite lumber for its upscale line of decks, fences and outdoor furniture. Not only does the company use 95 percent recycled materials to make its products, it has "green-lined" its production methods, eliminating the need for smokestacks, incorporating left-over materials back into the production line and hydraulically powering its bailers with a vegetable oil base. Its products are available in 29 countries, and the company reports over \$300 million in annual sales.



Hampton Roads Businesses that De-Manufacture Recycled Goods

In order for companies like The North Face, Rock Tenn and Trex to make new products from recycled goods, they need the raw materials broken down and delivered in a form they can use. That's the job of a de-manufacturer, a company that de-constructs recycled goods into components—such as bails of plastic or rubber injection molding—that are then sold to the manufacturers.

In Hampton Roads, there are several companies that do a brisk business of de-manufacturing—while keeping used electronics, paper, plastic and rubber from taking space in the region’s landfills.

The Hampton-based VersAbility Resources,¹⁶ which provides services to people with disabilities and their families, employs some of the individuals it serves to disassemble computers into small parts that are then sold to manufacturers for re-use or for making new products.

Eggleston Services,¹⁷ in Norfolk, takes a similar approach. They provide wages to people with disabilities to handle many of their enterprises, including a document-shredding program. Customers provide Eggleston with the paper goods, which employees shred, strip, bail and then ship to manufacturers for making new paper products.

In Virginia Beach, Boomerang Recovery specializes in de-manufacturing recycled plastic and rubber products into pellet-sized pieces that are repurposed for fresh products. They clean, granulate and color-treat used industrial tires to make and sell as mulch for playgrounds, garden beds and horse arenas. The damaged trash and recycling containers they accept are cleaned, shredded and transformed into new recycling containers that go back on the curb for a second life.

THE NEXT BIG THINGS

On a National Level

Municipalities and businesses throughout the United States are taking advantage of unique approaches to entice residents to recycle more and trash less.

Food Scrap Recycling Programs are becoming more prevalent in U.S. cities. In Portland, Ore., the city operates its “Portland Composts!”¹⁸ recycling program. Residents are provided with a tabletop compost container, in which kitchen food scraps are collected. When the container is full, the scraps are tossed (along with yard debris) into a compost roll cart for weekly curbside pickup. Composting facilities break down the organic matter and sell the compost to landscapers, agricultural users and residents.

Pay-As-You-Throw¹⁹ **Programs**, hosted by participating U.S. municipalities, allow residents to use designated bags or tags for waste removal and are charged based on the amount of trash they toss. This “less-is-more” concept provides a great economic incentive for residents to reduce waste and recycle; the less they trash, the less they pay.

Zero Landfill Initiatives, embraced by Canon Virginia, Continental, and Huntington Ingalls Industries (located in Newport News), have a goal to send 00.00 pounds of material to landfills. This is accomplished through a partnership with the City of Newport News and its Waste Eliminating Business program²⁰. The program involves tactics that are unique to the particular business operation. Some strategies include source reduction, such as decreasing the use of product packaging; maximizing onsite redirection by sending scraps back into the manufacturing process; composting food; and recycling whenever possible. Many industrial operations have taken the zero landfill philosophy to amazing levels. In addition to having a low environmental impact, these businesses also see a return on their investment by reducing waste disposal costs.

Regional Recycling Approaches of Note

Whether it's recycling incentives or expanded collection options, new approaches to recycling help divert waste away from landfills, reduce waste disposal fees and offer a second life to what may have once been considered trash. Here are a few innovative examples of what the cities and counties in Hampton Roads are doing to encourage residents to recycle more.

Bulk Recycling Program²¹

In August 2013, the City of Portsmouth started a curbside recycling program that is unique to the region. Not only can residents place their traditional recyclables (paper, plastic, glass, aluminum, etc.) in their containers, they may also place bulk items (furniture, appliances, wood waste, etc.) for curbside collection—and recycling. After collection, the MRF processes the bulky items to determine what is recyclable. A sort line is used to manually process the collected items. The majority of recyclables are picked out by laborers instead of being mechanically separated.

Latex Paint Recycling²²

Some area recycling programs offer latex paint recycling. For example, the City of Newport News, in partnership with a local paint manufacturer, has developed a program to collect left-over latex paint which is then re-formulated into new paint. The process reduces the cost of processing paint by over \$100 per-gallon drum, while producing a viable money-making product for the processor and a low-cost, high-performing product for the consumer. When made available to contractors, the recycled paint has proven to be popular for its high performance and lower cost. The program has become so popular that demand for the paint often exceeds the supply.

Oyster Shell Recycling

Several municipal recycling programs (including those in Norfolk and Virginia Beach) are collecting oyster shells for reuse in various watershed restoration projects. The recycled shells are often used by watershed restoration groups such as Chesapeake Bay Foundation, Lafayette Wetland Partnership and Lynnhaven River Now to build oyster reefs, reef balls and oyster castles.

Recycling Perks

Residents of Chesapeake, Norfolk and Suffolk can take advantage of the Recycling Perks²³ incentive program. Utilized by TFC Recycling, Recycling Perks rewards residents for their recycling participation based on how frequently they recycle. Radio Frequency Identification Data (RFID) tracking system technology provides information related to which addresses are recycling, how often they're doing so and which are not. The more often they recycle, the more points residents accrue toward discounts at local restaurants, retailers, entertainment outlets and attractions. The partnering municipalities benefit by increasing participation and set out rates for households in their recycling program.

Resource Recovery Centers

Resource recovery centers are changing the way people think about waste disposal and providing residents with a "one-stop shop" approach to recycling. The City of Virginia Beach is one of several localities to offer this approach. Recently, the City of Virginia Beach rebranded its landfill operation into the City Landfill and Resource Recovery Center.²⁴ At this innovative facility, landfilling is the last option as residents can drive through and drop off a variety of recyclables at various collection points. Accepted items include electronics, household hazardous waste, batteries, metals, tires, yard debris, concrete, dirt, bricks, porcelain, rigid plastics (toys, lawn furniture, etc.), and oyster and clam shells. In addition, Goodwill

Industries has a donation center on-site to accept clothing, shoes, books and more. Trash disposal costs are reduced as materials are diverted away from the landfill and into an available resource recovery option.

WHAT'S NEXT? NEXT STEPS AND SUMMARY

Since the first curbside recycling programs began in the 1980s, Hampton Roads municipalities have come a long way to make recycling more accessible to the public, from increasing the number of residents they serve, to offering innovative ways for their communities to recycle more and trash less. In turn, these programs help divert materials away from landfills (while helping to reduce costs), allow the waste to have a second life as a new product and support the businesses that serve the recycling industry.

The “recycling cycle” is an economic driver in Hampton Roads.



Once the recyclables are collected, there are over 20 Hampton Roads companies, employing hundreds of local residents, that potentially touch the goods. These include haulers, material recovery facilities (MRFs), beneficiaries and reclaimers. Their employees collect, separate and convert the waste into raw materials that are then sold to a domestic manufacturer for producing new products.

The recycling industry is ever-changing. The present state of recycling in Hampton Roads will not be the same in the future because residents will have new opportunities to recycle products that are presently considered trash. The recyclable materials collected at the curb are determined by the value of the material and how easy it is to process. The higher the commodity price, the more likely a MRF or beneficiary will be to accept it, all driven by the international and national markets.

What hasn't changed significantly is the public attitude about recycling. Research has shown that Hampton Roads residents believe they are recycling, but curbside recycling data from Hampton Roads municipalities show that residents are confused about what is recyclable and could be recycling more. Without a robust public outreach campaign, this confusion about what to recycle is likely to grow.

Effective public outreach is paramount to improving regional participation in recycling.

To that end, askHRgreen.org will continue its efforts to reach Hampton Roads residents through a region-wide public awareness and education campaign to provide the information residents need to become good environmental stewards. To support this initiative, askHRgreen.org has identified the following regional goals for the coming years:

- Establish Hampton Roads as a regional leader in recycling
- Encourage the development of a recycling economy which fosters the growth of recycling businesses in Hampton Roads
- Educate residents about what is recyclable and what is not recyclable at curbside
- Encourage residents to recycle more and get into the habit of setting out containers for regular pickup
- Increase the availability of curbside recycling, where needed
- Increase the frequency of curbside pickup, where needed
- Expand the list of recyclable materials that can be collected curbside

ADDENDUM

ABOUT ASKHRGREEN.ORG

askHRgreen.org is your go-to resource for all things green in Hampton Roads— from recycling tips and pointers for keeping local waterways clean to water-saving ideas and simple steps to make local living easy on the environment. Launched in 2011, the region-wide public awareness and education campaign is administered through the Hampton Roads Planning District Commission and powered by the following members: The cities of Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Smithfield, Virginia Beach and Williamsburg; the counties of Gloucester, Isle of Wight, James City, Southampton, Surry and York; and HRSD.

SOURCE LISTING

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15. Trex Website (2014) Always Green
16. VersAbility Resources (2014) Website
17. Eggleston Services (2014) Website
18. Portland, Oregon Website (2014) Portland Composts!
19. Waste.zero.com (2014) The Next Generation Pay As You Throw
20. City of Newport News Website (2014) Waste Eliminating Business Program
21. City of Portsmouth Website (2014)
22. City of Newport News Website (2014) Household Hazardous Waste E-cycling and Collection Program
23. Recycling Perks (2014) Website
24. City of Virginia Beach Website (2014) City Landfill Resource & Recover Center

ASKHRGREEN.ORG 2013 CURBSIDE RECYCLING SURVEY RESULTS

In November 2013, askHRgreen.org conducted a 2013 Curbside Recycling Survey among the 16 Hampton Roads cities and counties that are part of the Hampton Roads Planning District Commission jurisdiction. A total of 14 municipalities responded to the survey. Of the 14 respondents*, 12 offer residential curbside recycling programs. It's important to note that residential recycling programs change frequently. These survey results present a snapshot of residential recycling programs in Hampton Roads as they were at the end of 2013.

The information provided by the 12 municipalities makes up the data compiled for the survey results. Results of the survey note that:



The number of households served by curbside recycling programs range from 2,972. (Smithfield/Isle of Wight County) to 124,649 (Virginia Beach)

Some municipalities (6) said their curbside recycling programs include multi-family dwellings, such as apartments, condos, trailer homes, duplexes and townhomes. A few ⁽⁴⁾ noted that some restrictions apply:

- "If they pay for city trash service, they are eligible" (1)
- "Only for multi-family dwellings which generate approximate volume of recycling as a typical residential unit" (1)
- "Only offer service to residents as drop-off sites" (2)



The majority of the municipalities (8) do not require residents to opt in to the program.

The size of the containers range from 18-gallon bins to 95-gallon carts.

All survey participants said their city/county accepts: paper, paper products, aluminum/tin, glass and plastic bottles/jugs. In addition, 5 survey participants said their municipalities accept plastic tubs, such as yogurt and margarine containers.



Regarding pickup schedules, 4 municipalities offer curbside recycling weekly, 7 offer it every other week and 1 picks up bins weekly and automated carts every other week.

Most municipalities (9) are able to track the percentage of households that participate in the program through the MRFs. Of the municipalities that do, the percentage ranged from a low of 40 percent to a high of 75 percent. The average percentage of residents who participate is 57 percent.

In response to the question about which recycling company the city/county uses, they replied:

- RDS (1)
- AVES (1)
- TFC (9)
- BAY (1)



Most all participants (11) said that residential curbside recycling has been well received. One respondent noted that some residents enthusiastically support the program, while others "couldn't care less and who, at best, don't use their recycle containers and, at worst, use them as an additional trash container."



In response to the survey question about challenges associated with curbside recycling, the respondents weighed in:

- The enormity of the project being implemented
- Reducing contamination in single stream due to lid, plastic bags
- Cardboard getting caught in container not allowing (for a) complete dump
- Size of bin
- Limit of the materials recycled
- Contamination due to residents not being fully aware of what should and should not be put in cart; contamination due to residents misusing the cart as a trash container
- Too many residents don't recycle or don't recycle as much as they could
- High level of transiency in residents and rental occupants
- Apathy or other behavioral inertia among a percentage of residential population
- Educating decision makers on best practices to increase efficiencies of current collection operations, such as volume-based billing, material bans or alternate collection scheduling
- Private lanes, not enough road frontage due to ditches/flooding
- Getting residents to know their (recycling) week
- Would like to see residents put cardboard in their recycling bin
- More are recycling than we anticipated. We had to buy another truck!
- Costs/funding associated with the program
- Cutting refuse collection to 1 x week to increase recycling 1 x week
- Debris pickup disposal (would like to see this)
- Residents who put non-recyclable materials in their carts
- Residents not using their carts at all or to capacity
- Changing the behavior of non-recyclers
- Participation, amount collected and exclusion of certain plastics
- Short-term program changes
- Funding
- Lack of lid (on bin)



Typically, there are 1-2 dedicated municipal employees who are responsible for making residents aware of its curbside recycling program. Some have 4 or more, including customer service representatives.



A variety of media is used to reach residents with recycling messages, including direct mail, fliers, newsletters, media coverage, paid ads, social media, municipal websites/TV programming and TFC's Recycling Perks program, in addition to participation in outreach events. Promotional budgets range from none to \$10,000.



Funding for municipal curbside recycling programs comes from the city/county enterprise fund⁷ or the general fund.⁵

*The 12 municipalities that participated in the survey included: Chesapeake, Hampton, James City County, Newport News, Norfolk, Poquoson, Portsmouth, Smithfield/Isle of Wight, Suffolk, Virginia Beach, Williamsburg and York County. Gloucester and Surry counties replied that they do not offer curbside recycling programs at this time, but do operate several residential convenience centers.



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