RBAC

A cooperative effort of the N.C. Department of Environment and Natural Resources and the N.C. Department of Commerce.

Recycling Works

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North Davidson Garbage Service Inc. Builds MRF to Meet Current and Future Needs

by Hugh Jernigan, Senior Environmental Specialist, N.C. Division of Waste Management

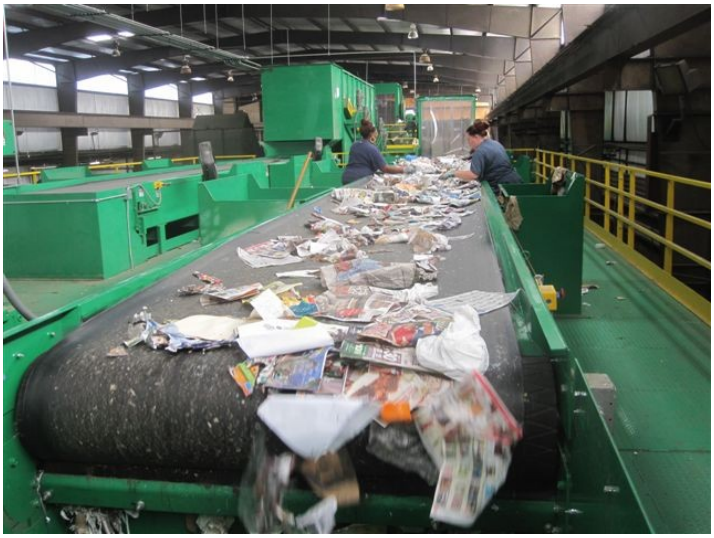
In 2010, North Davidson Garbage Service Inc., a three-generation, family-owned residential garbage collection company, was facing multiple challenges:

- it had outgrown its location in Welcome;
- the company was negotiating with the towns of Denton and Midway to provide contract services for curbside garbage and recycling collection; and,
- the company was receiving numerous requests for curbside recycling collection from its Davidson County residential customers.

After much deliberation, NDGS decided to purchase an abandoned 54,000 square foot building on 11.5 acres in Lexington at a fraction of the cost of constructing a new building. The company then purchased a 40-ton-per-hour recycling processing line from New Hampshire-based Green Machine Sales and a double-ram C&M Bailer.

The new system components were delivered at the end of 2010. Mark and Brad Everhart, president and vice president of NDGS, managed all construction and assembly activities internally, resulting in substantial cost savings. Grand opening festivities took place, appropriately enough, on Earth Day, April 23, 2011.

(NDGS continued on page 4)



Two of North Davidson Garbage Service's employees sort recyclables at the company's new material recovery facility in Lexington.

Inside

Recycling Works

a newsletter publication of the Recycling Business Assistance Center

N.C. DOT Issues New Guidelines for Recycled Asphalt Shingle Applications

by Sherry Yarkosky, Recycling Business Development Specialist

For the last three years, several North Carolina paving companies have been permitted to use recycled tear-off asphalt shingles in hot mix asphalt on private applications, such as parking lots and driveways. During that same time frame, the N.C. Department of Transportation (DOT), in collaboration with asphalt pavers, tested the performance of asphalt-containing, post-consumer reclaimed asphalt shingles (PRAS) on DOT-funded road projects.

The positive application results and the fiscal cost savings of the projects prompted DOT to issue a new specification for PRAS effective in October 2011. This new specification allows up to a maximum of six percent PRAS by total weight of asphalt mix.

Allowing the usage of recycled asphalt shingles on N.C. roads will make a huge impact in landfill diversion and material savings, while also creating new job opportunities. It is estimated that more than 260,000 tons of post-consumer shingles are available for diversion from landfills, resulting in more than $4 million in potential tip fee savings, as well as $20 million in materials costs savings for the manufacture of the paving materials. It is also estimated that 260-325 jobs will be created through increased shingle recycling collection, transportation, testing and processing.

Paving crew resurfaces a N.C. roadway using post-consumer recycled asphalt shingles in the hot asphalt mix.

With the proper permits, many pavers across the state, such as Greenville Paving shown here, process and grind shingles for use in hot mix asphalt.

To assist those in the business of recovering, processing or using PRAS in DOT applications, *A Best Practices Guide for Post-Consumer Reclaimed Asphalt Shingles in Asphalt Pavement* was written in collaboration with the N.C. Department of Environment and Natural Resources — divisions of Waste Management, Air Quality, Environmental Assistance and Outreach; N.C. Department of Transportation; N.C. Department of Health and Human Services — Health Hazards Control Unit; Carolina Asphalt Pavement Association; and the paving industry.

In general, an asphalt producer can obtain PRAS in three ways:

- in the processed form – tested, ground and ready to be used in asphalt pavement;
- from a permitted solid waste facility, then processed at the asphalt plant; or,
- directly from roofing contractors, then processed at the asphalt plant.

(SHINGLES continued on page 3)

2012 Recycling Business Grant Round Opens

by Matt Todd, Recycling Business Development Specialist

The N.C. Recycling Business Assistance Center (RBAC) announces the opening of the 2012 grant round. Please visit our website to download the RFP.

Applicants may request any amount of funding up to a maximum of **$40,000**. Applicants must provide at least a ***50 percent cash match*** to the requested amount. RBAC has committed **$700,000** for this grant cycle.

Private sector and nonprofit organization applicants are eligible for funding under this grant cycle. RBAC is seeking viable, well-planned and effective proposals and encourages you to consider applying for this grant if you are a N.C. recycling business seeking to start-up or expand your recovery efforts. ***Proposals are due by Feb. 3, 2012***.

What?
The purpose of this grant cycle is to reduce solid waste disposal and to encourage sustainable recovery of materials from North Carolina's waste stream.

Who is eligible?
Private sector and nonprofit organization applicants are eligible for funding under this grant cycle. One funding request per applicant will be accepted.

What kinds of projects are eligible?
Projects that involve the collection, processing or end use of materials in the solid waste stream are eligible for funding. Generally, the grant money is intended to fund sustainable investments in equipment and buildings necessary for increasing the capacity of a recycling business to divert more materials from disposal and into economic use.

What waste materials will be considered for this grant round?
Any material that can currently be disposed in a municipal solid waste landfill, construction & demolition debris landfill, or land-clearing and inert debris landfill is eligible for consideration for this grant round.

Projects that address construction & demolition waste recycling or food waste collection will receive special consideration.

For more information, contact Matt Todd at (919) 707-8137, or matthew.todd@ncdenr.gov.

***SHINGLES* continued from page 2**

In each case, the source of the PRAS must be documented and each requires different permits. Prior to being ground, shingles must be tested for asbestos at minimum intervals of 100 tons of material received by a N.C. Accredited Asbestos Inspector or an Accredited Roofing Supervisor.

Prior to using PRAS, asphalt plants must modify their air quality permit to allow them to use the shingles and not be subject to NESHAP or the asbestos toxics regulations.

"It is estimated that 260-325 jobs will be created through increased shingle recycling collection, transportation, testing and processing."

Although the new guidelines will be helpful to those wanting to start collecting, processing or using recycled asphalt shingles, those currently involved in asphalt shingle recycling should also carefully read the *Guide* and adopt the new requirements.

For more information, contact Sherry Yarkosky at sherry.yarkosky@ncdenr.gov or (919) 707-8133.

NDGS continued from page 1

NDGS celebrated its grand opening with a community-wide Earth Day event in 2011, including facility tours, refreshments, and games for kids.

NDGS invested approximately $3 million in the company's new recycling operations, including the development of the single-stream MRF and the new recycling collection service. This investment has enabled the company to diversify its revenues and increase its ability to serve the community. The company also added three full-time employees and eight part-time employees with this investment in recycling.

Currently, the facility is processing approximately 360 tons per month of recyclables and expects that amount to increase substantially during the coming months. Materials processed include corrugated cardboard, mixed paper, newspaper, magazines, office paper, bottles, cans and glass. Due to the efficiency of the operation and quality of collected recyclables received at the facility, residuals thus far have been limited to three to four percent.

To collect curbside recyclables, the company converted one garbage truck to operate as a dedicated recycling route collection vehicle. The company later purchased one new truck and now is considering purchasing an additional recycling truck. Beginning in August 2011, the company began the first curbside recycling collection service for rural Davidson County residential customers. In addition, the company took over the established recycling residential routes for the towns of Midway and Denton.

The facility is receiving and processing recyclables from the cities of Lexington and Thomasville. Further, NDGS has entered into a cooperative agreement with Alpha Waste (a company collecting commercial recyclables) to process its materials.

"I am pleased with the company's investment in the future," said Brad Everhart. "I'm very happy that the sale of recyclables are 'paying the bills' for the facility so soon after beginning operation." NDGS is understandably proud of its operation at the new location at 4157 Old US Highway 52 in Lexington.

For more information about North Davidson Garbage Service, visit http://www.ndgarbage.com/ or contact Brad Everhart at brad@ndgarbage.com or (336) 731-4025.

Guest writer, Hugh Jernigan, is a senior environmental specialist with the N.C. Division of Waste Management, Solid Waste Section. He can be reached at hugh.jernigan@ncdenr.gov or (336) 771-5093.

NDGS's 320-foot semi-automated material recovery system includes an elevated picking line, inclined disk screens, multiple material bunkers and baling operations.

Roadmap to a Good Recycling Business Decision

The steps that North Davidson Garbage Service Inc., used to make well-thought-out decisions can be a roadmap for anyone considering implementing a recycling initiative:

- Identify a need *(in this case, how is the company going to handle and process the collected recyclables?)*.
- Explore options on how to meet the need.
- Conduct a cost analysis on the various options.
- Choose an option that most meets your requirements and is affordable.
- Research and understand potential markets for processed recyclables.
- Develop a strategy for what materials to recycle and to what degree of processing.
- Investigate the potential for recycling grants.
- Be prepared to take advantage of significant cost savings *(purchasing an existing structure that meets your needs offers potential savings in design and construction costs)*.
- If possible, do your own equipment modification or assembly with available staff.
- Investigate potential tax credits or advantages for recycling.

Southeast C&D Recycling Conference Comes to Columbia, SC

by Matt Todd, Recycling Business Development Specialist

The second Southeast Construction & Demolition Debris Recycling Conference is set for Dec. 6-8, 2011, in Columbia, SC. The agenda will delve into many important topics, including:

- ***C&D Planning***, featuring implementation examples
- ***Building and Operations***, featuring green building programs and their influence on design
- ***C&D Recycling Incentives and Policies***, including landfill bans, surcharges, fast-track permitting and requirements for public buildings
- ***Proven Strategies for Waste Reduction and Recycling***, including on-site source separation, on and off-site processing, cost savings examples and green building materials and products
- ***Disaster Planning and Recovery***
- ***Overcoming On-Site Challenges***
- ***See the full agenda***

Remember, if you are a member of the CRA and wish to get membership rates for the C&D conference, please activate your email in the new online member and event management system. Read the instructions how to activate your membership.

Visit the C&D Conference website for more information, to register, sponsor or exhibit at the conference. We hope to see you there!

Benfield Sanitation Opens Single-Stream MRF in Mooresville

by Matt Ewadinger, RBAC Manager

Statesville-based Benfield Sanitation Services has been providing residential, commercial and industrial customers with solid waste management services for more than 50 years. The recycling component of BSS's operations has evolved significantly from the days when its major endeavor was providing cardboard collection service to commercial clients. Part of that evolution has been the establishment of a program that today serves ABC permit holders in Iredell, Rowan, Cabarrus, Davie, Lincoln and Mecklenburg counties with regular recycling pick-ups.

In 2010, BSS established its first city-wide, single-stream curbside collection recycling operation in the town of Troutman. The company provides residents with 95-gallon rollout carts, which help to further increase the program's collection efficiencies.

Now, BSS is embarking on its largest recycling endeavor to date: the construction and operation of a single-stream MRF in Mooresville. Located on a 6.5 acre site, the 27,000 square foot facility opened in September 2011. Although it is in its early stages of operation, BSS is already anticipating future growth by designing the facility to accommodate an additional 21,875 square feet of processing and storage capacity.

A series of conveyors will feed the material storage bins below after recyclables are sorted in Benefield's new single-stream material recovery facility.

Brian Burgess of Benfield Sanitation and Bill Clark of Reflective Recycling discuss logistics in front of the multi-material baler's feeding pit.

The new MRF's operations include sorting screens, picking stations, storage bunkers and a two ram multi-material baler. The facility has the capability of processing up to 63,000 tons per year of single-stream recyclables and initially operates with a workforce of 10 people. Overall, BSS employs 14 people in its recycling operations.

Currently, the facility accepts and processes plastic containers #1-7, aluminum and steel cans, newspapers, magazines, cardboard, mixed paper, plastic film and glass. Given the size of the site and the potential for future building expansion, BSS's long-range plans include investigating the viability of adding other materials to its recycling menu, including e-waste, wood pallets and aggregates.

"The construction of the MRF, including its high-tech processing equipment, will enable us to increase both our collection and processing capacity, as well as more efficiently sort single-stream recyclables from residential sources," said BSS owner, Brian Burgess. "We look forward to marketing our commingled recycling program to our growing service area, which currently covers 10 counties and 38 cities."

For more information, contact Brian Burgess at (704) 872-2668, or brian@bsstrash.com.

Seat Fabric in All-New Ford Focus Electric Made from Unifi's 100 Percent Recycled REPREVE® Fiber

by Matt Ewadinger, RBAC Manager

Sitting on empty plastic bottles while driving or riding in a car would be less than ideal. That's not the case when it comes to the all-new Ford Focus Electric, as it features seat fabric made of recycled material that includes the equivalent of more than 20 plastic bottles per car.

The fiber – called REPREVE® – is made from a hybrid blend of recycled materials and manufactured by Unifi Inc., a global leader in sustainable textile solutions. Check out the cover story in the Summer 2011 issue of Recycling Works for more information about the grand opening of Unifi's REPREVE recycling operation.

Unifi officials say 22 plastic, 16-ounce water bottles are used in the seat fabric of a single Focus Electric. The figure is based on the amount of REPREVE branded fiber used in the production of fabric in each vehicle. The launch alone will result in 132,000 bottles saved from the landfill.

PET plastic bottles, like those shown here, are used to make the REPREVE fiber that will be used in new Ford Focus Electric.

Ford is the first automaker to use REPREVE branded fiber in its seat fabric.

"What better vehicle than the Focus Electric to put seat fabric made of recycled materials?" said Carol Kordich, lead designer of Sustainable Materials for Ford. "Not only does the use of this fabric in Focus Electric help reduce waste, it also helps to offset the need to produce new raw material from crude oil – a process that consumes precious energy and natural resources."

The 2012 Ford Focus Electric is green in other ways, too. Focus Electric runs on battery power alone, requiring no gasoline and producing zero carbon dioxide emissions.

"We are excited to work with Ford for the introduction of REPREVE into the automotive industry," said Roger Berrier, president and COO of the Greensboro-based Unifi. "As REPREVE continues to expand into new applications and markets, consumers are becoming more aware of companies like Ford and Unifi working together to make a positive impact on the environment."

In 2009 Ford mandated that fabric suppliers use a minimum of 25 percent recycled content for all 2009 and beyond model year vehicles. Since then, 37 different fabrics meeting the requirements have been developed and incorporated into Ford vehicles.

Kordich said Ford is taking it a step further by mandating that fabric be 100 percent sustainable in vehicles with eco-conscious powertrains like Focus Electric.

REPREVE fits the bill, she said, because it is a combination of post-industrial fiber waste and post-consumer waste, like the plastic water bottles made of polyethylene terephthalate plastic. Using REPREVE also reduces energy consumption by offsetting the need to use newly refined crude oil for production.

"It made sense when we were designing the Focus Electric to keep pushing for even more innovative ways to offer our customers the best, most environmentally sound products without sacrificing quality," said Kordich.

REPREVE meets all Ford performance requirements, said Kordich, and Ford already is considering other uses across its entire car and truck lineup.

For more information about Unifi visit www.unifi.com, or to learn more about REPREVE visit www.repreve.com.

REPREVE® is a registered trademark of Unifi Inc. and is registered with the U.S. Patent and Trademark Office and with others and is used by Ford under license.

Wellmark Plastics Lands Hanger Deal

by Matt Todd, Recycling Market Development Specialist

Located in Asheboro and in business since 1995, Wellmark Plastics, one of the top 50 plastic recyclers in the U.S., currently employs 70 people and has the capacity to recycle 45 million pounds of material annually. Wellmark recycles material across a broad spectrum of plastic resins, including polypropylene, polystyrene, polyethylene (i.e., HDPE, LDPE), and some engineered plastics like ABS and PC.

The company has continued to invest in technologies with updated recycling and extrusion capabilities in separation, shredding, grinding and blending, including its most recent addition of non-woven scrap processing. Material comes from a number of sources, including textile dye tubes, industrial scrap from injection/extrusion molders, discarded nursery containers, bottle caps, and manufacturers of non-woven fabrics.

In late 2011 and early 2012, Wellmark Plastics is poised to expand and add capacity to handle a new line of material. Wellmark will purchase equipment and install a production line capable of separating the material components within bales of discarded plastic apparel hangers to provide high-value feed-streams of recyclable plastics.

The display hangers and related material are generated by a national retailer. This material will be baled and delivered by the truckload to Wellmark Plastics. Wellmark will create a closed-loop recycling process from the supply of incoming hanger bales. Hanger bales will typically weigh 800-900 pounds each and contain multiple types of plastics, including poly-bags, gift cards, metals (clips, etc.), and other "contamination" compacted in the bale. The project will include the development of a new processing line to separate the bale components into feed-streams of clean metal, polypropylene, polystyrene, polyethylene and paper.

The metal and paper will be sold off to other recyclers and the three grades of plastic will be extruded at Wellmark into high quality pellets for injection molding. The reprocessed plastic pellets will be used to make new hangers and other products. The new clothes hangers will be sold back to the original retailer for resale as a consumer product.

This project will convert more than 10 million pounds of discarded plastic apparel hangers into 100 percent recycled resin that will be used to manufacturer plastic products that are sold by the retailer all over the U.S. The development of this new production line will add 20 new jobs at Wellmark Plastics, and provide the capacity for more business growth in the years to come.

For more information, visit www.wellmarkplastics.com or contact Eddie Lambert at elambert@wellmarkplastics.com or (336) 498-1881, ext. 204.

Recycling Works is published by the N.C. Recycling Business Assistance Center, a program of the Division of Environmental Assistance and Outreach of the N.C. Department of Environment and Natural Resources. For more information call (877) 623-6748, or write to DEAO, 1639 Mail Service Center, Raleigh, NC 27699-1639.

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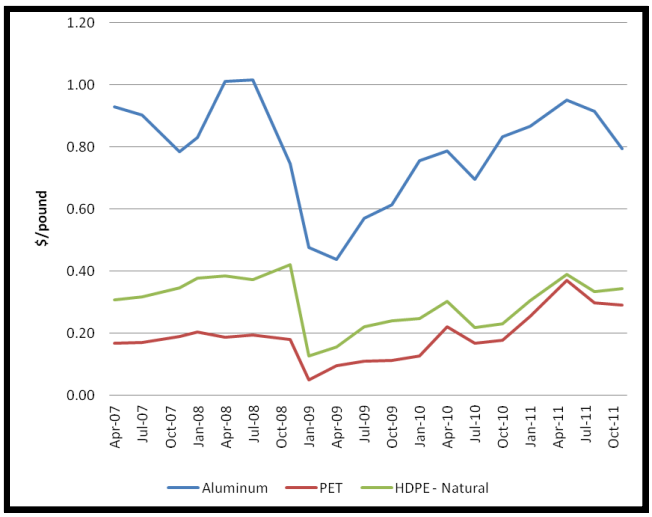
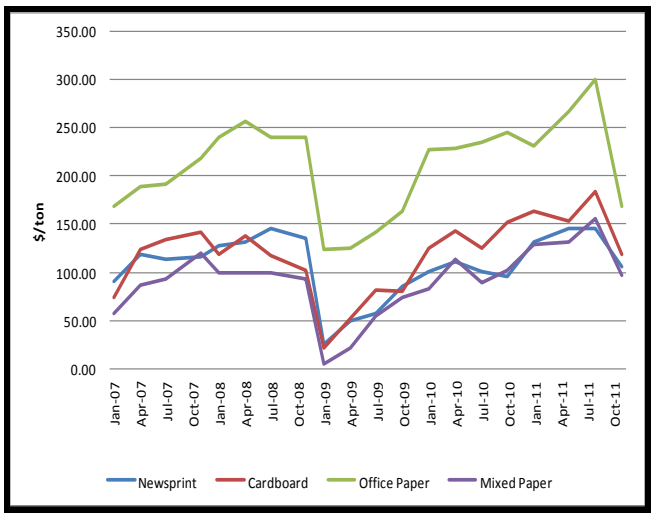
Container Price Trends



Quarterly prices for aluminum cans (loose), PET (baled) and HDPE natural (baled) in dollars per pound.

Paper Price Trends



Quarterly prices for newsprint, cardboard, office paper and mixed paper in dollars per ton, baled.

RECYCLE 2 MILLION TONS BY 2012

The Recycling Business Assistance Center (RBAC) is a program of the N.C. Division of Environmental Assistance and Outreach.

Call (877) 623-6748 for free technical assistance and information about preventing, reducing and recycling waste.

RECYCLEMORE

RE3.org

North Carolina Market Prices for Recyclables

Prices current as of Nov. 4, 2011

Item	Western Region	Central Region	Eastern Region
METALS			
Aluminum Cans lb. loose	$0.7825	$0.8000	$0.8000
Steel Can, gross ton baled	$304 gt	$115	$240
PLASTICS			
PETE, lb. baled	$0.285	$0.310	$0.275
HDPE, lb. baled Natural Colored	$0.34 $0.25	$0.34 $0.22	$0.35 $0.25
PAPER			
Newsprint, ton baled	$110	$100	$108
Corrugated, ton baled	$120	$110	$125
Office, ton baled	$170 (SOP)	$150 (SOP)	$185 (white ledger)
Magazines, ton baled	*	$120	**
Mixed, ton baled	$110	$100	$80
GLASS			
Brown, ton crushed delivered	$18	$20	$17
Clear, ton crushed delivered	$25	$30	$21
Green, ton crushed delivered	$3	$12	($7.50)

*Markets with Mixed Paper
**Markets with Newsprint
Note: Prices listed above are compiled by RBAC and are for reference only. These prices are not firm quotes. RBAC obtained pricing information from processors for each category and developed a pricing range.

Visit RBAC online at www.p2pays.org/rbac