



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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Wanted: Scrap Drywall For Recycling

by Matt Ewadinger, RBAC Manager

Steve Davis was in the drywall contracting business for about three years when he began investigating recycling gypsum as a potential alternative to paying thousands of dollars a year in landfill tipping fees. When he began his drywall recycling business near Marshville in 1999, Davis sold ground gypsum in bulk at a discount to local farmers. His product replaced the virgin agricultural gypsum used as a soil amendment farmers would otherwise purchase at a premium price.

According to the National Association of Home Builders, waste from constructing the average residential home (2,000 sq. ft.) consists of up to 30 percent gypsum drywall scrap. Drywall contractors or homebuilders can be left with almost one ton of residual gypsum at each job site that either must be disposed of or recycled.

During the eight years that Union Gypsum has been in operation, the company has been marketing close to 5,000 tons per year of recycled gypsum drywall. Davis now wants to greatly increase his feedstock to as much as 20,000 tons per year.

“It has taken a long time to happen, but the development of new markets for our product means that we need to branch out and find new supply from as many locations as possible,” said Davis.

To date, Union Gypsum’s major source of gypsum drywall feedstock has been independent cleanup companies that remove it from new construction sites. Davis is courting two potentially large sources of gypsum drywall – the North Carolina manufactured housing industry and innovative local governments that want to aggressively expand the recovery of construction and demolition debris from their waste stream.

(See [Wanted](#), Page 7)



Drywall waste being consolidated at New Hanover County’s C&D recycling operation.

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2007 General Assembly Makes History With Solid Waste and Recycling Legislation

by Scott Mouw, Community & Business Assistance Section Chief

In 1989, the North Carolina General Assembly passed a landmark solid waste law known as Senate Bill 111. That measure fundamentally altered the rules and responsibilities of solid waste management and laid the foundation for most solid waste policy in North Carolina (with some notable modifications) for many years to follow.



In 2007, almost two decades later, the General Assembly passed Senate Bill 1492, that may likewise be later viewed as a turning point for solid waste management and recycling in North Carolina. In a session when the vast majority of more than a dozen bills on solid waste and recycling failed – including a bottle bill, a measure to reduce delivery of phone books, proposals on mobile home recycling, etc. – S1492 survived the session to bring major changes to landfill permitting and siting, financing of state and local solid waste activities and management of computer equipment.

New Landfill Requirements

S1492, a 30-page bill with many technical components, is difficult to summarize quickly, but includes a number of major provisions.

State landfill permitting standards addressing issues such as buffers, siting criteria, financial assurance, traffic studies, liner requirements and the size of potentially permissible facilities were changed substantially. S1492 includes new requirements that future construction and demolition landfills have synthetic liners, which will eventually make C&D disposal more expensive and reduce the number of operating facilities in the state.

The N.C. Division of Waste Management will now be charging fees for the processing of new and renewed permits for a broad range of solid waste facilities such as municipal solid waste and C&D landfills, industrial landfills, tire monofills, transfer stations, incinerators and large compost facilities. These new fees come with requirements for DWM to make quicker review of permits.

Statewide Disposal Tax

In one of the most controversial parts of the bill, North Carolina became the 32nd state to have a statewide disposal tax. Beginning July 1, 2008, a \$2 per ton fee will be charged on all waste coming into MSW and C&D landfills and transfer stations that send waste out-of-state. The proceeds of the fee will first be used to compensate a few landfill developers for the stranded costs of proposed facilities that now are effectively stopped by the new permitting requirements. After this one-time distribution, tip fee proceeds will flow in four directions: 50 percent to the clean-up of old landfills, 18.75 percent to counties and 18.75 percent to municipalities for solid waste program costs, and 12.5 percent to the Solid Waste

(See [Legislation](#), Page 3)

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LEGISLATION, from page 2

Trust Fund for grants to local government and state agency recycling programs.

Computer Recycling

The final major component of S1492 is a section requiring computer manufacturers to adopt producer responsibility plans for the recovery of discarded computer equipment. Under this section, manufacturers will need to register with the state and then implement services that provide free transportation and processing of discarded equipment from collectors, which can include local governments, nonprofits and retailers. This portion of S1492 does not begin until January 2009, starting with manufacturer registration and plan submittal.

The legislation also bans the disposal of computer equipment as of Jan. 1, 2012.

Recycling Fluorescent Lights Study

A minor provision added to S1492 was a mandate to the Department of Environment and Natural Resources to conduct a study and make recommendations on the recycling of fluorescent lights. The study is due March 1, 2008, and reflects concern over the growing use of fluorescents, which use less energy and so considerably reduce power plant emissions of mercury but also contain a small amount of mercury in their own right.

HB267 Changes ABC Permit-Holder Recycling Requirement

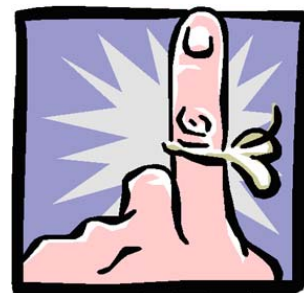
S1492 was not the only piece of recycling legislation to pass in 2007. The General Assembly also enacted some major changes to the ABC permit-holder recycling requirements. House Bill 267 takes out revocation of permits as a penalty for non-compliance, leaving enforcement instead focused on fines. H267 also adds requirements that all new and renewing permits include the submittal of a recycling plan.

Finally, permit-holders are given an opportunity to request a one-year stay from the recycling mandate if they encounter extraordinary impediments to implementing a collection program. These requests will be reviewed and decisions rendered by the ABC Commission, with assistance from N.C. DPPEA. With the vast majority of permit-holders having access to recycling services, it is unlikely that many stays will be granted.



Attention N.C. Recycling Businesses!

You probably received a request by e-mail or by U.S. Mail from the Recycling Business Assistance Center to fill out a brief survey designed to help update the 2004 Employment Trends in North Carolina's Recycling Industry study.



The study's goal is to measure the continuing impact of recycling on the state's job market. As was the case with the 2004 study, this important research will support the position that recycling is not only good for the environment – but also good for the economy! Please help RBAC and the industry by taking a few minutes to respond to this important survey. Thank you.



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Curbside Recycling Service Comes to the Outer Banks

by Matt Todd, Recycling Business Development Specialist

It's 6:30 a.m. on a summer Saturday in Rodanthe, a village on the Outer Banks of North Carolina. A few people are out fishing or walking on the beach. Others are looking for the perfect wave.

Although Todd Phillips would love to be doing any of those things, instead he's beginning his collection route for Hatteras Recycle, like most every other Saturday and Sunday morning.

Phillips is part owner of Hatteras Recycle and recently completed the first summer season offering curbside recycling service to rental cottages, campgrounds and restaurants in the villages of Rodanthe, Waves and Salvo. Outer Banks' Midget Realty is a partner and committed about 200 of its rental properties in the tri-village area for collection. Along with a few more from Cape Escape and Outer Beaches Realty, as well as Camp Hatteras campground, Phillips' weekends are busy.

With help from a grant provided by N.C. DPPEA, Hatteras Recycle was able to ramp-up and provide its customers with recycling containers. Fifteen-gallon bins are provided inside the cottage that allow renters to collect and carry material safely down to a 35-gallon cart outside.

In other news . . .



The Asheboro Recycling Center had an open house on July 19 celebrating its new 33,000 square foot location at 1075 Southmont Drive in Asheboro. The new facility will begin processing Asheboro's new residential curbside recycling program that started on Nov. 1.



Matt Todd (RBAC) and Volunteer Carol Bauer rest at the end of a weekend collection for Hatteras Recycle (photo by Todd Phillips).

The 35-gallon carts were chosen not only to offer more capacity per house, but also to prevent litter caused by material blowing out of curbside bins. The often-windy conditions on the Outer Banks make this a top priority.

In addition to containers, Hatteras Recycle also purchased a used diesel stake-body truck for collection. Material is dumped by hand from the 35-gallon carts into multiple 18-gallon curbside bins. The curbside bins are then placed on the back of the truck for separation. Material is sorted on the truck into mixed glass, metal, #1 plastic, #2 plastic and fiber.

Dare County has been a welcome partner with a recent upgrade of its recycling drop-off center in Rodanthe and by allowing Hatteras Recycle to empty the curbside material it collects into the recycling dumpsters there.

Recycling services will continue through the off-season, with about 50 percent occupancy through Thanksgiving. The first summer was challenging, but a huge success. With lessons learned and plans to move forward, Hatteras Recycle hopes to keep growing in 2008. Phillips forecasts the addition of other realty management companies, as well as expansion south into the village of Avon.

**Need financing?
See p. 7**

New Opportunities For Recycling Companies

by Tom Rhodes, Waste Management Analyst

House Bill 1518, sometimes referred to as the "ABC Container Recycling Bill," will provide some unique challenges to bars and restaurants beginning January 2008. Along with those challenges will come an opportunity to make a contribution to the state's recycling efforts.

As bars and restaurants scramble to locate markets for their bottles and cans, forward-thinking waste hauling and recycling companies are gearing up to handle an increased flow of materials, accompanied by increased revenues.

Manufacturing companies that use recycled glass in end products will benefit as well by having a reliable supply



of feedstocks. Manufacturers of brick, pavers, reflective paint, glass containers, fiberglass filters and other glass-containing products will now have an opportunity to capture an increased material stream and turn it into functional products. Aluminum can and plastic bottle recyclers will find that those materials will become more plentiful also.

For more information about technical and financial assistance for recycling businesses, visit the RBAC Web page at www.p2pays.org/rbac/ or call (800) 763-0136. Information about the ABC Container Recycling Bill and other material bans can be found online at www.p2pays.org/BannedMaterials/ABCcontainer/.

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100 Percent Recycled Bricks Made in N.C.

by Sherry Yarkosky, Recycling Business Development Specialist



Green Leaf Brick pavers in downtown Salisbury.

If you ever find yourself at the corner of Fisher and Main streets in downtown Salisbury, take a look at the beautiful red brick pavers under your feet. These aren't just ordinary brick pavers; they're made from waste products once destined for the landfill.

Salisbury is the first city in the country to use locally manufactured 100 percent recycled bricks and brick pavers in citywide improvements. The bricks and pavers, called "Green Leaf Brick," are composed of 100-percent recycled materials, specifically designed and engineered for the environmental or green-oriented builder.

Green Leaf Brick is a cooperative effort of the Red Tree Group, various local brick manufacturers and industrial entities working together to transform industrial waste streams into beautiful high-end masonry products. Green Leaf Brick provides materials and expertise to established brick manufacturers to make its products.

Recycling Works is published by the N.C. Recycling Business Assistance Center, a program of the Division of Pollution Prevention and Environmental Assistance of the N.C. Department of Environment and Natural Resources. For more information call (919) 715-6500 or (800) 763-0136, or write to DPPEA, 1639 Mail Service Center, Raleigh, NC 27699-1639.

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N.C. Division of Pollution Prevention and Environmental Assistance



The next project in Salisbury incorporating Green Leaf Brick will be the Emergency Medical Services building at North Shaver and East Council streets. Construction of the building will begin in Spring 2008.

Duke University also has a recent installation of Green Leaf Brick. Terraced landscape walls have been constructed at a student courtyard on campus. Word is spreading about the newly-available masonry product.

"We're developing a lot of interest from other North Carolina universities and colleges in the Northeast about using our product in green building projects," said James Kolodziej, president, Red Tree Group Inc.

No new land is mined to secure materials for use in the manufacturing of Green Leaf Brick. All recycled materials that compose Green Leaf Brick can be classified as pre-consumer, post-consumer, post-industrial or reclaimed.

(See **Brick**, Page 8)

LOANS FOR RECYCLING COMPANIES

A Project of the N.C. Environmental Loan Fund

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N.C. Environmental Loan Fund: Self-Help established the N.C. Environmental Loan Fund to provide financing to small businesses and other organizations that preserve our natural resources. Projects that are targeted for financing include recycling firms, land conservancies, environmental consulting and services, environmental equipment firms, and sustainable development products and services. Self-Help has extended more than \$6 million in financing to this growing and important segment of our economy.

WANTED, from page 1

Davis has entered into a contract with New Hanover County to transport and process the drywall waste from its recycling/disposal operations and is in negotiations with a number of other counties. In addition, he has met with five manufactured housing companies that generate a considerable amount of drywall scrap and plans to be collecting material from them in the near future.

That potential large increase in supply, coupled with what Davis sees as increasing market demand, has encouraged him to begin expanding his operation.

"We plan to construct a 3,000-square-foot building that will enable us to operate in all weather conditions in order to meet more stringent market specifications," said Davis.

In addition, he plans to purchase and install a horizontal baler that will help open additional market alternatives for the paper component of the recovered gypsum wallboard.

Currently, Union Gypsum has six employees. If its new marketing plan is successful, Davis anticipates hiring six more employees over the next few months as demand for his product increases. For more information about Union Gypsum, contact Steve Davis at (704) 624-2077.

Natural Capital Investment Fund

NCIF makes loans and investments in the \$35,000 to \$250,000 range, primarily to expanding businesses.

NCIF targets recycling businesses

Recycling businesses interested in NCIF funding should contact Rick Larson at The Conservation Fund at rlarson@conservationfund.org or by phone at (919) 967-2223.

NCIF is an affiliate of The Conservation Fund, a national non-profit with a unique commitment to balanced land and water conservation solutions that emphasize the integration of economic and environmental goals.



Recycling Business Financing Workshop

The Carolina Recycling Association, in partnership with Self-Help, the Natural Capital Investment Fund and RBAC, will hold a Recycling Business Development Workshop on Tuesday, Nov. 13 from 6:30 to 9 p.m. at Self-Help's Charlotte Regional Offices located at 926 Elizabeth Avenue. A \$25 registration fee covers a light dinner.

This workshop will provide a practical, hands-on approach for development of a new recycling business or expansion of current operations. Come and learn about financing issues, including grant and loan programs, and discover who can provide help in identifying and overcoming obstacles to a successful recycling business endeavor.

Workshop Speakers:

- **Dale Harrold** - Charlotte regional director, Self-Help Credit Union
- **Rick Larson** - N.C. program manager, Natural Capital Investment Fund; and director of Sustainable Ventures, The Conservation Fund
- **Meredith Marley** - co-owner, Shimar Recycling Inc.
- **Matt Todd** - market development specialist, Recycling Business Assistance Center; and manager of the Recycling Business Development Grant Program
- **Matt Ewadinger** - manager, Recycling Business Assistance Center
- **M. Douglas Speight** - fund executive, Inception Micro Angel Fund

For more information on the workshop, please contact the CRA at (919) 545-9050.

BRICK, from page 6

Many types of recycled or industrial byproducts can be used in Green Leaf Brick. Select materials are rescued from landfills, open pit mining byproducts, incinerator ash and industrial plant refuse.

For waste streams to be considered for composition in Green Leaf Brick, materials need to be readily available, possess excellent ceramic properties and meet stringent safety handling criteria, while contributing to the aesthetic focus of the products. The company is always seeking fine particular post-consumer glass and refuse mining materials to employ in the production of Green Leaf Brick.

If you have a potential waste product for consideration or to learn more about the bricks or pavers for green building construction, contact James Kolodziej at (704) 307-0930, or by e-mail at james@greenleafbrick.com. Learn more about Green Leaf Brick on its Web site at www.greenleafbrick.com/index.html.



Duke University's new landscaping walls are made from Green Leaf Brick.



The Recycling Business Assistance Center is a program of the North Carolina Division of Pollution Prevention and Environmental Assistance.

Call (919) 715-6500 or (800) 763-0136 for free technical assistance and information about preventing, reducing and recycling waste.



| North Carolina market prices for recyclables | | | |
|---|----------------|----------------|----------------------|
| Prices current as of October 17, 2007 | | | |
| Item | Western Region | Central Region | Eastern Region |
| METALS | | | |
| Aluminum Cans, lb. loose | \$0.7825 | \$0.80 | \$0.77 |
| Steel cans, gross ton baled | \$160 | \$107 | \$148 |
| PLASTICS | | | |
| PETE, lb. baled | \$0.185 | \$0.18 | \$0.21 |
| HDPE, lb. baled | Natural | \$0.365 | \$0.32 |
| | Colored | \$0.265 | \$0.21 |
| PAPER | | | |
| Newsprint, ton baled | \$120 | \$110 | \$117.55 |
| Corrugated, ton baled | \$145 | \$135 | \$145 |
| Office, ton baled | \$190 (SOP) | \$195 (SOP) | \$270 (white ledger) |
| Magazines, ton baled | * | \$105 | ** |
| Mixed, ton baled | \$120 | \$115 | \$125 |
| GLASS | | | |
| Eastern Region sells glass F.O.B. origin | | | |
| Brown, ton crushed delivered | \$15 | \$16 | \$17 |
| Clear, ton crushed delivered | \$25 | \$26 | \$21 |
| Green, ton crushed delivered | (\$0) | \$0 | (\$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. | | | |

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