



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

Recycling Works

Volume 15, Number 1

Winter 2009

What Can Be Learned From the Recycling Market Crash of 2008?

by Jerry Powell, Editor, *Resource Recycling*

The dust is slowly settling and we now can make a few statements about the rapid and sizable decline in recycling demand and pricing that occurred in the fourth quarter of last year.

It's the economy, stupid

Recycling certainly got whacked, as did many of the industry sectors where recycled products are consumed, such as auto production, housing, construction, publishing and consumer products. Recycling demand dipped by at least one-fourth, and prices plummeted by about two-thirds.

The important message, however, is that recycling's economic weakness parallels those of nearly every sector, including the virgin material industries that compete with recycled product firms. For example, the current low prices for both virgin and scrap plas-

tics mostly reflect the two-thirds drop in the price of oil since last summer, not the slowdown in demand for plastic products.



A market adjustment was expected

Not all of the price drop can be explained by weakening demand. Many industry analysts were saying in late summer, before the credit crunch and the bursting of the housing bubble, that the record-high prices for recyclables in mid-2008 were unsustainable, and that these prices were going to trend downward. In other words, prices for recovered fiber, metallics and plastics probably would have dropped by about one-fifth no matter what the economic situation.

(See **CRASH**, Page 3)



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Solid Waste Down Second Year in a Row

by Scott Mouw, Chief, Community and Business Assistance Section

Reversing a long-term trend in North Carolina, total disposed tonnage dropped in North Carolina in fiscal year 2007-08. After peaking at a high of 11,865,829 tons in fiscal year 2006-07, waste fell to 11,221,016 tons, or a decline of about 5.4 percent. Fiscal year 2007-08 also marks the second year in a row that the per capita waste disposal rate went down. The 1.24 tons per capita marks the lowest rate of disposal in North Carolina in five years.

The general economic slowdown is probably the main reason for the decline in waste tonnage. In particular, the main engine of waste growth over the past decade – construction and demolition debris – has been substantially reduced as housing starts and other building decelerated throughout 2008. Increased recycling also helped put a dent in waste sent to landfills, with the ABC law driving diversion of containers and an uptick in recycling tonnages collected by local government recycling programs. Another factor was probably the drought, which helped reduce the moisture content and therefore weight of solid waste.

The total tonnage of materials diverted by local governments also dropped slightly in fiscal year 2007-08 when yard waste is included, again in large part due to the drought. From a record high of 1.346 million tons in fiscal year 2006-07, total local government diversion fell back to 1.255 million tons. But this decline was almost entirely due to a 13.6 percent decline in yard waste, down more than 77,000 tons in fiscal year 2007-08. With waste

tires also lower by 45,000 tons, the overall diversion rate could not keep up its recent trend of annual increases. If yard waste and tires had held at their numbers for fiscal year 2006-07, overall diversion would have been up by more than 2 percent.



The good news in the data for fiscal year 2007-08 is the continued steady improvement in the performance of local government recycling programs. Total paper recycled grew again this past year by more than 15,000 tons or about 5 percent. Container recovery also jumped, in excess of 90,000 tons for the first time ever, rising 8,000 tons from the year before. This increase was due in part to new collection programs for ABC materials – glass recovery climbed 5,000 tons in fiscal year 2007-08 or almost 10 percent. Early indications are that fiscal year 2008-09 will see the upward recycling trend continue as municipalities modernize their curbside programs and counties upgrade drop-off collection, adding programs to capture electronics, oil filters and a host of other materials. It remains to be seen how much negative market conditions in the middle of the fiscal year temper the trend.

Sales Tax Incentive for Manufacturing Equipment

by Ben Rogers, Industrial Development Representative



North Carolina law allows a sales and use tax incentive related to purchasing manufacturing equipment. This tax incentive allows a one-percent privilege tax rate on equipment purchases with a **maximum tax of \$80.00 per article**.

Therefore, rather than the usual seven percent sales tax, a one percent tax on equipment is charged per article. To qualify, the business must be in North Carolina, use purchased equipment for operational use, and most importantly, fall within the definition of “manufacturer.” The N.C. Department of Revenue relies on case law to define manufacturing. In general, manu-

facturing can be defined as changing the form of a commodity, or creating a new and more valuable commodity.

To take advantage of this tax incentive, N.C. DOR recommends that a company apply for a ruling regarding its status as a “manufacturer.” It’s a good idea to prepare an outline of the raw materials/ feedstock used, explain the process or treatment (materials are subjected to), describe the final product and intent for the final product. The relevant sales and use tax statutes and technical bulletins can be found on N.C. DOR’s Web site (www.dornc.com) under “Information for Tax Professionals.” Please contact the Sales & Use Tax Division of the N.C. DOR at (919) 733-2151 for more information about this program.

CRASH, from page 1

Weak credit markets hurt the recycling industry

Many recyclables move between sellers and buyers based on credit. A scrap yard might borrow money, use it to buy recovered metal, process this material, sell it and then pay back the bank. Similarly, an export shipper might load a container based on an order that includes a letter of credit from an offshore bank. Poor global credit markets are a detriment to recycling's viability.

No generalizations are possible

We have seen some recycling firms and programs in this country be nearly decimated by current market conditions, while others have been able to maintain operations and pay their bills. What explains this difference? A range of factors are in play in the national recycling market. If you are a supplier distant from consuming mills, you'll get hurt, because many mill buyers have tightened up their buying circumference. If you've been a loyal supplier to a consumer, you'll be favored over the processor who constantly plays the spot market. If you were forward selling recovered material under supply contracts, this is a benefit. If you supplied materials to a consumer-owned processing facility, such as a scrap yard owned by a steel mill or a paper packaging plant owned by a paperboard mill, you'll probably do better. If you delivered quality recyclables with low contaminant levels, you may be favored. Thus, the impact of current market conditions is determined in a great part by the supplier's business and marketing model. It's easy to predict that many recycling industry players will learn from this experience and will change their ways of operating.

Mills don't want to see shuttered processors

We're seeing more and more evidence that some secondary material consumers are offering pricing that they hope will keep the supply system viable, even though they may be losing money on each ton purchased. As an example, paper mill buyers know the cost of picking up and baling fiber, and they know what's needed to keep suppliers operating. Having local recycling processors go out of business is not a benefit to anyone, including end users.

The recycling industry suffered similar massive economic hits in the mid-1970s, late 1980s and mid-1990s. In my case, I was forced to park my recycling trucks and let my 10 employees go in 1974 due to the lack of any market demand for fibers and metals. But in all cases, the economic trauma lasted a year or less, and market demand slowly rebounded. We hope the same market resurgence happens again, and soon.



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Recycling Market Development Partnership Formed

by Matt Ewadinger, RBAC Manager

The Polymers Center of Excellence, a Charlotte based not-for-profit, and the Carpet America Recovery Effort, a joint industry-government effort to increase the amount of carpet recycling and reuse, have entered into a partnership to advance the development of markets for recovered post-consumer carpet.

PCE's efforts will include training, testing and technology development. Training activities to enhance the characteristics of carpet feedstock will include teaching reclaiming techniques, stabilization of recycled products, recyclable material properties and processing techniques. Testing activities will be undertaken to confirm the value of recycled carpet and will, in many instances, lead to third-party validation.

"There is strong interest in using post-consumer carpet polymers; our challenge is tapping into the market in a meaningful way," said Frank Hurd, chairman of CARE.

The challenge at this time is that compounders and injection molders do not know what the carpet recycling industry has to offer and the carpet industry does not know what the plastics industry requires for its processes.

In addition to the grading system, dialogue has begun with large users of recycled plastics to determine their requirements for feedstock material.

A standardized grading system for recovered carpet material will help alleviate this problem by easing the transition of recovered carpet materials into the plastics industry as a feedstock.

"We fully expect that technology development activities will lead to the creation of new products or product categories that supply 'certified' carpet recycled products to the plastics industry," said Dennis Hayford, executive director of PCE.

For more information about PCE, contact Dennis Hayford at (704) 602-4101 or visit www.polymers-center.org. For more information about CARE, contact Jeremy Stroop, CARE Operations Manager at (706) 428-2127 or visit www.carpetrecovery.org.



PCE's 29,500 square-foot facility in Charlotte's University Research Park.

The Polymers Center of Excellence – Who We Are

by Dennis Hayford, Executive Director



PCE students learn about operating a 21 mm twin screw extruder.

The Polymers Center of Excellence is a contractor to the N.C. State University Industrial Extension Service and the University of North Carolina at Charlotte. It is dedicated to supporting the plastics industry through training, material testing, technical support and development of emergent technologies.

State-of-the-art molding, extrusion and testing equipment

is available to serve client companies, as well as provide a hands-on dimension to PCE's training and workforce development activities.

An industry-oriented, mutually supportive relationship with the plastics community has been the key factor to PCE's success. Now PCE has embarked on another mutually supportive program with the carpet industry's Carpet America Recovery Effort organization. The program is aimed at converting carpet waste into reuseable injection molding and extrusion grade compounds (see story above).

If you would like to visit and tour the PCE facility, please call (704) 602-4101 to arrange a time. A virtual tour is also available online at: www.polymers-center.org/about.htm.

N.C. Museum of Art Outdoor Event Recycling

by Sherry Yarkosky, Recycling Business Development Specialist

During the 2008 N.C. Museum of Art Summer Music and Movie series, visitors were able to recycle their aluminum cans, plastic bottles and glass wine bottles while they enjoyed an outdoor music show or a movie.

The outdoor event recycling program was an expansion of the museum's internal office and restaurant recycling program. Additionally, the new program enabled the museum to be in compliance with North Carolina's 2008 law requiring facilities selling beer, wine and liquor to recycle glass bottles, aluminum cans and plastic bottles.

Gweneth Hastings, manager, Performing Arts & Film Programs, who also served as the museum's recycling leader, was interviewed recently by RBAC's Sherry Yarkosky to discuss the outcome of the N.C. Museum of Art's expanded outdoor event recycling program.

RBAC: Overall how did the summer music and movie recycling program turn out?

MOA: It was definitely a learning year, but overall we are happy with our program.

RBAC: Did you hear positive or negative feedback from attendees about the new recycling program?

MOA: We heard positive feedback from our visitors. Most of our audience is environmentally conscious and they were happy to see we're making an effort. We've learned that consistency is important - it helps to have a recycling bin next to every single trash can. We want our visitors to be able to count on being able to recycle, no matter where they are in the museum park or in the museum building.

We didn't hear any negative feedback directly. However, when patrons enter the museum grounds they are given a small trash bag for their garbage. We did notice that some patrons fill up the bag at the end of the night with trash as well as their recycling (cans and bottles), and throw it in the garbage cans as they leave the park theater. If our visitors see a recycling bin next to every trash can consistently, we'll be able to encourage more separating of recyclables at the end of the night.



The N.C. Museum of Art made simple, customized recycling container labels to assist guests in recycling the correct materials and minimize contamination.

RBAC: How did the recycling containers work for the program?

MOA: For the most part, the recycling containers worked well. The size was manageable for our housekeeping staff and the flip-top lid worked well to encourage putting only your recyclables in the bin and not an evening's worth of trash.

RBAC: How was the housekeeping staff affected by the recycling program?

MOA: Our housekeeping manager feels the recycling containers were used by the majority of our visitors. However, some recyclables still inevitably ended up in the trash bins. No extra work was created with the new recycling containers, and the amount of trash we would normally have

put in our Dumpsters was reduced.

(See **NCMA**, Page 8)

Natural Capital Investment Fund

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

Recycling businesses interested

in NCIF funding should contact

Rick Larson 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.



From Grease Traps to Food Waste Composting

by Brian Rosa, Organics Recycling Specialist

Earth Farms LLC, formally Tri County Environmental LLC, was formed three years ago to process grease trap and domestic septic waste collected by its sister company Stanley Environmental Solutions Inc. Earth Farms began dewatering the waste before disposing of it at the county landfill at a cost of \$57 per ton, plus hauling costs. Owner, Jim Lanier, and his partner, Tommy Morrison, quickly realized there had to be a better solution. Composting the material to create a value-added product was the answer.

Earth Farms changed the zoning for its facility to allow composting and received approval for a demonstration / pilot permit from the N.C. Division of Waste Management to experiment with composting the waste. In 2006, Lanier and Morrison attended the weeklong compost school hosted by the Carolina Compost Council. Shortly thereafter, Earth Farms purchased a loader and a trommel screener and began to screen a product fit for the landscaping market. Lab tests soon confirmed they had a quality compost product.

"We are constantly trying to make better compost and look at other markets that we can tap into to help keep compostable products out of the landfills and make our earth a little

cleaner," says Jim Lanier.

Earth Farms is currently working toward producing compost utilizing food waste as one of its feedstocks.

"We feel there is a big future in food waste composting," says Lanier. "However, we've found that hauling is the missing link in food waste diversion."

In 2008, Earth Farms received a N.C. Division of Pollution Prevention and Environmental Assistance Recycling Business Development Grant. The grant money is being used to purchase containers and a roll off truck to service food waste accounts.

Earth Farms and Harris Teeter are working together to start collecting food waste in the Charlotte/Mecklenburg area. Several other area businesses are also having Earth Farms collect their food wastes, including Microsoft, Lance Foods and Johnson and Wales University, a culinary arts school in Charlotte. At Johnson and Wales, it will be picking up the kitchen waste from 16 training kitchens, as well as its dorm cafeteria. Earth Farms currently picks up 4,500 pounds per week at other restaurants and is getting more and more requests for service.

For more information about Earth Farms, please contact Jim Lanier at jim@stanleyenviro.com or (704) 263-8186, or visit its Web site at www.stanleyenviro.com.

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Recyclers in the News



Steel Dynamics Subsidiary Purchases Recycle South

The last year has seen a string of mergers and acquisitions in the southeast steel recycling industry. Atlantic Scrap and Processing (Kernersville) merged with Carolina's Recycling Group (Spartanburg, S.C.) in Sept. 2007. Less than a year later in May 2008, Carolina's Recycling Group was acquired along with Cohen & Green Salvage Co. (Fayetteville) and Lumberton Recycling Co. (Lumberton) by Recycle South LLC.

(See **NEWS**, Page 8)

Impacts of Contaminated HDPE Bales

by Sherry Yarkosky, Recycling Business Development Specialist



In addition to being contaminants for HDPE recyclers, solid colored PET bottles are also problematic for many PET recyclers as well and may end up being sent to landfills and not recycled.

With the current slump in recycling commodity prices, it is more important now than ever that recyclables sold to market are free of contaminants. Not only does contamination affect the profit margins of end markets, but also generators and intermediate handlers risk having truckloads of contaminated bales rejected and returned for resorting and baling, further increasing the loss of labor hours and profits.

Focusing on the high density polyethylene market, contaminants include clear and colored PET bottles, metal, trash, injected molded HDPE (flowerpots, pails, buckets and other wide-mouthed containers), and other plastic bottles such as polypropylene (ketchup and syrup bottles). When bales of HDPE that contain more than an acceptable level of contaminants are purchased by the market, several negative financial consequences happen. First, the company loses “yield,” meaning it paid for something it can’t use. Second, the contaminants need to be removed and then sent to landfills, which further increases operating costs.

As a case in point, Envision Plastics in Reidsville is an HDPE plastics processor that optically sorts pigmented HDPE and manufactures color-sorted plastic pellets for the detergent bottle industry. If colored polyethylene terephthalate bottles, which are made from a completely different resin, are mixed with HDPE in the incoming baled material, it contaminates the entire bale. Multiply that by a truckload of contaminated bales and the economic loss to Envision quickly escalates.

Myllinda Jacobsen, purchasing manager at Envision Plastics, stresses the importance of “quality” for each commodity brought to the end market.

“Sending consistent HDPE bales with the lowest possible level of contamination will ensure the best price and fastest movement under any market condition,” states Jacobsen. She further emphasizes, “This is not just a problem for HDPE manufacturers, but all other commodity markets need clean, uncontaminated recyclables in this difficult economic time as well.”

In order for end markets to improve the quality of commodities, end markets, including Envision Plastics will be enforcing incoming quality inspection and receiving guidelines. Strict adherence to bale specifications will be standard operating procedure. Bales that do not meet specifications will be downgraded or rejected.

The most effective way to maintain high quality recycling commodity bales is to stay in contact with end markets to discuss effective ways to keep bales free of contaminants. End markets typically publish lists of unacceptable contaminants and define specifications for acceptable materials.

As the current global economic slowdown has impacted the movement and price of recycling commodities, recyclers selling high quality bales with minimal contamination will have a competitive edge over those not meeting manufacturers’ specifications. As the past boom in global recycling markets eased quality specifications, the economic downturn demands a return to quality recyclable commodities in face of the challenging economic times ahead.

Injection grade HDPE containers (shown above) and solid colored PET bottles are Envision Plastics’ biggest contaminant offenders.



Injection grade HDPE containers (shown above) and solid colored PET bottles are Envision Plastics’ biggest contaminant offenders.

NCMA, from page 5

RBAC: Was the recycling company picking up the materials helpful?

MOA: We don't have the capacity to store a large volume of recyclables on site, so the willingness of Orange Recycling Services to make special pickups the first business day after all events was invaluable. They were helpful and very easy to work with. (See Orange Recycling Provider Spotlight, next page.)

RBAC: Will there be any program changes for the upcoming 2009 summer music and movie series based on lessons learned from 2008?

MOA: The NCMA is in the process of starting a "Green Team" to spearhead and coordinate projects like these across the whole of our institution. We will continue to work on helping educate our visitors about what is recyclable and what's not, and to provide them the means to recycle while they are visiting the NCMA.

RBAC: Do you know how many bottles and cans were recycled?

MOA: We sold:
5,016 cans of beer
2,564 bottles of wine
2,029 bottles of water
1,217 cans of soda

Based on estimates from experts at DPPEA, we think we recycled 75 percent or more than 8,000 beverage containers in 2008.

RBAC: Do you have any event recycling advice for other venues such as the MOA?

MOA: Appoint a recycling leader, form a "Green Team" if possible, and seek out advice from local experts. The NCMA received much appreciated support, advice, and hands-on help from Rachel Eckert and Sherry Yarkosky

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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Bianca Howard (third from left), City of Raleigh recycling education specialist, plays recycling roulette with guests at the family fun event prior to the showing of "Horton Hears a Who" at the Museum of Art.

with the N.C. Division of Pollution Prevention and Environmental Assistance.

When making design and operations plans, keep the visitor experience at the forefront. Most people want to do the right thing; you just have to make it easy.

For more information, contact Gweneth Hastings with the NCMA at (919) 664-6819 or ghastings@ncmail.dcr.state.nc.us.

NEWS, from page 6

Now, in the latest acquisition, Steel Dynamics completed the acquisition of scrap metal dealer Recycle South LLC in June 2008. Its OmniSource Corp. subsidiary owned 25 percent of Recycle South and bought the remaining equity interest for about \$515 million.

Recycle South has 22 locations throughout North Carolina, South Carolina and Georgia and employs 700 people. It generated annualized revenue of \$730 million based on actual results from September 2007 to April 2008. It processed 1.4 million tons of ferrous and 150 million pounds of nonferrous scrap.

Recycle South will operate as a division of OmniSource, and will be called OmniSource Southeast.

Provider Spotlight: Orange Recycling Services Inc.

Founded in 1989, Orange Recycling Services Inc., located in Durham, specializes in the design, development, implementation and servicing of recycling programs for the commercial sector. Orange Recycling Services prides itself in developing simple and efficient recycling programs catering to the individual needs of their commercial clients.

Orange operates a fleet of 19 vehicles, all of which run on 100 percent biodiesel, which reduces vehicle air emis-

sions by 70 percent over conventional ultra sulfur diesel. Orange Recycling employs 32 people.

To learn more about Orange Recycling, contact Perry Black at (919) 688-5660 ext. 23 or visit its Web site at www.orangerecyclingservices.com.



The Recycling Business Assistance Center is a program of the N.C. 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 Jan. 12, 2009

Item	Western Region	Central Region	Eastern Region
METALS			
Aluminum Cans, lb. loose	\$0.47	\$0.49	\$0.47
Steel cans, gross ton baled	\$20	\$0	\$20
PLASTICS			
PETE, lb. baled	\$0.05	\$0.065	\$0.045
HDPE, lb. baled	Natural	\$0.13	\$0.13
	Colored	\$0.10	\$0.10
PAPER			
Newsprint, ton baled	\$25	\$25	\$25
Corrugated, ton baled	\$15	\$20	\$30
Office, ton baled	\$90 (SOP)	\$100 (SOP)	\$180(white ledger)
Magazines, ton baled	*	\$30	**
Mixed, ton baled	\$5	\$5	\$5
GLASS			
Eastern Region sells glass F.O.B. origin			
Brown, ton crushed delivered	\$18	\$19	\$17
Clear, ton crushed delivered	\$25	\$29	\$21
Green, ton crushed delivered	\$3	\$2	(\$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 <http://www.p2pays.org/rbac>