NORTH CAROLINA
RECYCLING BUSINESS
ASSISTANCE CENTER

A cooperative effort of the North Carolina Department of Environment and Natural Resources and the North Carolina Department of Commerce.

Recycling Works

Volume 5, Number 2 Summer 1999

New market for mixed paper

By John Nelms, Industrial Development Specialist

Mixed paper instead of wood shavings for poultry bedding? In recent years the timber industry's increased efficient use of wood residue has created a shortage of wood shavings for poultry growers to use for bedding material. This shortage has led researchers to consider other bedding materials. Any bedding material must be non-toxic, able to absorb moisture, and able to release moisture. From a recycling perspective, the use of mixed paper as a substitute for wood shavings could bolster a historically soft mixed paper market.

Preliminary Study

The Division of Pollution Prevention and Environmental Assistance, through the Solid Waste Trust Fund, funded research with Dr. Tom Carter at North Carolina State University to look into the mixed paper issue. In 1996, he tested mixed, colored, and newsprint paper as a poultry bedding. His findings showed no difference in performance, breast blisters, leg or carcass quality, and microbial levels. The paper-based product did show a higher moisture level at the end of two consecutive 55-day trials.

*(See **Mixed Paper**, Page 6)*

Perry Russell, a poultry farmer in Montgomery, N.C., uses mixed paper for bedding in his poultry houses. After nine days of using the paper, Russell observes there are no problem-causing darkling beetles in the bedding.

Inside

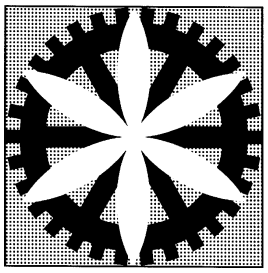
Sorry! Because of excessive time required to publish RBAC's *1998 North Carolina Markets Assessment of the Recyling Industry and Recyclable Materials*, a May issue of *Recycling Works* was not published. Our apologies for any confusion or inconvenience.

***Recycling Works* is a quarterly publication. Previous issues of the newsletter have been cataloged according to month of release. RBAC is changing its cataloging system and will be using seasons rather than months for this and future issues.**

Sustainable Jobs Fund invests in recycling businesses

By Anne Claire Broughton, Sustainable Jobs Corporation Associate

The Sustainable Jobs Fund (SJF), Durham, N.C., is a new community development fund with a strategic focus on the recycling, remanufacturing and environmental sectors. Businesses in these sectors are particularly suited to generating employment for former welfare recipients and low-wealth individuals in economically distressed neighborhoods.



The Fund was conceived and developed by David Kirkpatrick and Richard Defieux, who met during the recycling investment forums co-organized by Kirkpatrick between 1995 and 1998 through his economic development firm, KirkWorks. Kirkpatrick had an interest in expanding the availability of patient capital for recycling and environmental businesses, especially those that created needed employment. Defieux, who is a successful venture capitalist with Allegra Ventures and the Edison Venture Fund, was concerned about the impact of Welfare to Work mandates and sought a way to help create jobs in low-income communities. Together, they realized that recycling, remanufacturing, and selected environmental companies can often generate quality job growth in those communities. However, the growth of many of these firms is often hampered by lack of access to capital.

"We believe that investing in environmental and recycling businesses can help create jobs that are accessible to low-wealth citizens, both in location and required skills," says Kirkpatrick, founder and managing director of SJF. "SJF plans to use community development-oriented capital to fuel rapid job growth in poorer urban and rural regions of North Carolina and other areas of the eastern United States."

Partnerships

The Sustainable Jobs Fund is working closely with a number of other North Carolina organizations. For example, Self-Help, North Carolina's community development bank, will coordinate and co-invest with SJF where appropriate. Self-Help has an environmental lending initiative which offers loans of amounts from $500 to $2.5 million to businesses in recycling and other environmental sectors (see Self-Help ad, page 3). SJF will also work with the Recycling Business Assistance Center (RBAC) to identify recycling and remanufacturing businesses that fit SJF's investment criteria.

"Self-Help and RBAC do important work financing and assisting North Carolina recycling businesses," Kirkpatrick said. "The Sustainable Jobs Fund will cooperate with these existing organizations and will offer additional equity and subordinated debt financing options."

The National Recycling Coalition (NRC), Alexandria, Va., is also a key ally in the development of SJF. NRC is raising grant funds to support business outreach, research, and assistance services. To date, NRC has received $115,000 in grants from the Citicorp, Z. Smith Reynolds, and Turner Foundations for the Sustainable Jobs Fund.

Community Development

The Sustainable Jobs Fund will be capitalized as much as $15 million in investments and loans from financial institutions, foundations, and other community

*(See **Fund**, Page 3)*

Recycling Works is published by the N.C. Recycling Business Assistance Center (RBAC), a program of the Division of Pollution Prevention and Environmental Assistance of the N.C. Department of Environment and Natural Resources (DENR). For more information call (919) 715-6500 or (800) 763-0136, or write to DPPEA, P.O. Box 29569, Raleigh, NC 27626-9569.

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Jason Hale, RBAC Market Development Specialist
John Nelms, RBAC Industrial Development Specialist
Tom Rhodes, RBAC Market Development Specialist
Sharon Gladwell, Information & Communications Specialist

Fund, from page 2

The Sustainable Jobs Fund, a community development fund, invests in recycling businesses located in economically distressed areas of North Carolina.

development investors. SJF will invest in seed, growth, and expansion stage private companies.

To potentially qualify for an investment from SJF, a business would need to be able to answer "yes" to the following questions:

- Is your company located or planning a facility in an economically distressed area?
- Will your firm create quality jobs for former low-income citizens or welfare to work participants?
- Does your business need an investment from $50,000 to $1 million through equity, subordinated debt, or royalty-financing agreements?
- If you are seeking a growth or expansion investment, does your company have current sales and near-term profit potential?
- Do you have a strong management team or plans to recruit one?
- Do your company's products and services have proven markets?
- Does your company have a business plan for sustained, profitable growth?
- Are you in the recycling, remanufacturing, or other environmental sectors? And are you seeking a value-added investor with expertise in those markets?

SJF welcomes business plans from promising recycling and remanufacturing firms in North Carolina and the Eastern U.S.

For more information, contact Mr. David Kirkpatrick, managing director, Sustainable Jobs Fund, P.O. Box 15909, Durham, NC 27704; Business (919) 220-8065; Fax (919) 220-9720; david@kirkworks.com; or Anne Claire Broughton, associate, Sustainable Jobs Fund, 306 North Estes Drive, #12-M.

N.C. Department of Transportation and recycling: a capital idea

Since 1991, the N.C. Department of Transportation (NCDOT) has pioneered the use of recycled products in highway construction. From tire chips to plastic, the department introduced a variety of recycled materials into construction projects throughout the state. Based on the success of these materials, NCDOT recently decided to showcase their experience in one section of Interstate 540 or the Raleigh Outer Loop, the much-needed and much-touted bypass around the state's capital city.

These drainage pipes are made from 100 percent recycled plastics.

"We chose the Raleigh Outer Loop for the location of our pilot project because of its high public interest," explained NCDOT Conservation Engineer Marie Sutton. "By using as many recycled materials as possible, we plan to demonstrate to highway designers and contractors that recycled materials are viable — and cost-effective — substitutes for traditional products."

Planning for the use of recycled materials on this project began in 1994. Once the final design was approved, the conservation team began looking at ways recycled materials could replace traditional products. The project's three-mile length proved particularly suitable for the extensive use of a number of recycled materials.

The challenge lay convincing the contractors to "go green." But the conservation team helped pave the way by submitting a materials list and information on suppliers to prospective bidders. After a fair market bidding process, the project was awarded to Blythe Construction Company of Charlotte, N.C.

Construction of the project, which will tie U.S.70 to the Raleigh Outer Loop, began in November 1996 and is still underway. Following is a list of recycled materials used in construction.

Tires

Since NCDOT introduced recycled tires into highway construction in 1991, the department has planned to use at least one million tires each year. In fact, through the use of tire chips, NCDOT exceeded its original goal last year, using more than 1.6 million recycled tires.

Nineteen tons of tire chips (about 1,900 tires) will be used in the Raleigh Outer Loop project, tilled into a portion of the soil along the embankments. Tire chips serve as an excellent aerator for young plants and are a much cheaper fill than pure soil. In addition, one of the weed mats under the guardrails will be manufactured from tire chips.

Plastics

Recycled plastic has been used in this project in several ways. The guardrail offset blocks — the blocks that are inserted between the steel guardrails and the support posts behind them — are made from recycled plastic. Offsetting the rail from the support posts with a plastic block stabilizes the guardrail and also helps minimize the damage inflicted to cars that may bump against it. In addition to offset blocks, temporary slope drainage pipes made from recycled plastic are being used during excavation of the embankments along the highway. Plans are currently underway for the installation of recycled plastic delineators — the flexible guideposts that help direct traffic.

(See DOT, Page 5)

DOT, from page 4

Post-Industrial Asphalt Shingles

Nearly 700 tons of shingles — "seconds" left over from the manufacturing process — have been mixed into the asphalt on a section of the Outer Loop project. In contrast to tires, these shingles make an excellent blending medium for asphalt—producing a driving surface that is attractive and durable.

Municipal Sludge

The City of Raleigh donated 260 tons of municipal sludge to the department to use in place of agricultural limestone fertilizer on the Outer Loop project. The sludge, which is being spread along the embankments, will provide a nutrient-rich base for landscaping.

Coal Fly Ash

A mixture of concrete and coal fly ash will be used to fill the inner core of the sign posts, which will be installed near the end of the project. The coal fly ash, which is a by-product of the coal burning process, was donated by local power companies.

"Most of the recycled products, like the drainage pipes or the asphalt-shingle mix, perform just as well as traditional products," said Stephen Daniel, NCDOT Project Engineer. "The only product that requires an adjustment on our part is the municipal sludge. Unlike limestone, which is very fine and powdery, the sludge clumps together. The construction team has to break it up before spreading it. But overall, I'm very pleased with the performance."

Above: These guardrail offset blocks are made of recycled plastics and wood fibers.

Right: The core of this sign post is made from a light-weight concrete that contains fly ash, a byproduct of the coal burning process that was donated by local power companies.

In addition to using recycled materials in the construction of this project, NCDOT also established a "no burn policy." This requires contractors to dispose of the waste generated during clearing and grubbing in a way that does not harm the environment. Instead of burning waste, contractors either mulch the material and sell it to outside agencies or find a way to reuse it in other construction projects.

The use of recycled materials has added as much as four percent to total project costs in the past. Due to the increasing availability of recycled products, materials used in the Raleigh Outer Loop project are expected to add only a quarter of one percent, a tiny fraction of the total cost. Balanced against the increasingly high cost of landfill space, the value of environmental efforts on the Raleigh Outer Loop project is well worth the investment.
The price for recycled materials is expected to continue to fall, thanks in part to the efforts of the NCDOT's Recycled Products and Solid Waste Utilization Task Force, established in 1992. The Task Force is working with RBAC to increase the number of markets for recycled goods. The group sets goals for the use of established recyclable materials while continuing to explore the use of products which need further study, such as glass and newspaper.

The future for recycled materials at NCDOT has never been "greener." Plans are currently underway to build a "Green" Rest Area along Interstate 85 in Cleveland County, showcasing construction from recycled materials as well as building techniques for energy efficiency.
"Besides teaching our partners about environmentally-friendly construction, we're also committed to increasing public awareness about the benefits of recycling," said Sutton. "With projects like the Raleigh Outer Loop, the public can see for themselves that recycling, whether it's household plastics or commercial waste, does make a difference."

Mixed Paper, from page 1

Field Trials

With the results from this study in hand, the next step was to move forward with a field trial of the mixed paper litter. John Caviness of Environmental Impact RC&D approached RBAC with the willingness and know-how to make a field trial in the Sandhills region of North Carolina a reality. With his network of Sandhills' poultry growers, Caviness put together a group of farmers willing to take part in the project. Carter, at NCSU, signed on to monitor the houses, provide data, and ensure the results would have scientific credibility.

Tommy Edwards (top), a poultry farmer in Anson Co., N.C., and Don Thompson (bottom), co-vice chairman of Environmental Impacts Inc., unload bales of processed mixed paper. Mixed paper is used as a substitute for wood shavings to provide bedding and insulation in poultry houses.

The mixed paper product was installed using standard cellulose insulation blowing equipment. Donald Edge of Blown-Rite Insulation, who installed the mixed paper in the houses, sees the product litter as a whole new market for his company to pursue.

"It would be a natural business for us to get into since we can use our existing equipment and the mixed paper product is very similar to the insulation product we currently use," Edge said. "The only difference is that this product is a little coarser."

Positive data concerning the darkling beetle, a problem that has always been present with houses using shavings, is directly attributed to the use of boric acid in the processing of the mixed paper. Insulation manufacturers use boric acid as a fire retardant, and it provides the added benefit of controlling the darkling beetle.

Conclusions

Conclusions from this study show that mixed paper can indeed be a viable substitute for wood shavings since mixed paper provided comparable to favorable results in the data collected.

"This study could go a long way towards providing a sound alternative for poultry farmers when shavings are not available or when the costs associated with using them is prohibitive," Carter said.

Results from an on-farm test of mixed paper as a poultry bedding substitute for wood shavings prove that mixed paper can be a viable option for farmers, while providing a new market niche for the soft mixed paper market.

If these results lead to even partial implementation in the field the impact on the demand for mixed paper just in the four-county area of the study could be significant. RBAC is working to identify a paper processor who would want to locate in the Sandhills region to serve this potential new demand.

Caviness sees a two-fold benefit to this study. "My hope is that this research will provide an alternative to the poultry farmers who have had to depend on shavings as their bedding material and it will also stimulate new jobs and investment in the form of a paper processing facility. Right now the transportation costs of the paper product make the economics questionable. A processor nearby could make mixed paper the bedding material of choice."

Announcing updated recycling resources

Now Available

1998 North Carolina Markets Assessment of the Recycling Industry and Recyclable Materials

This assessment is the third analysis of the recycling industry conducted by the State of North Carolina. It characterizes North Carolina's waste stream for 1997 and 2002 and focuses on supply and demand for 26 recyclable materials. It also discusses trends and highlights changes that have occurred during the years and provides recommendations for the improvement of North Carolina's recycling infrastructure.

The assessment is available on line at http://www.p2pays.org/ref/02/01622.htm. For a hard copy of an individual commodity profile or the entire document, contact Jason Hale, RBAC market development specialist, at (919) 715-6542 or (800) 763-0136. For more information, see order form below.

Coming Soon

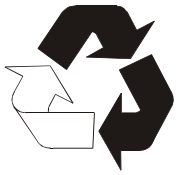
Directory of Markets for Recyclable Materials (Updated June 1999)

This directory, which has been updated to include more than 100 new recycling businesses, lists a broad spectrum of recycling companies working in all realms of the industry. It includes a comprehensive listing of recyclable material brokers, collectors, processors, and end users servicing North Carolina.

The directory is accessible on line at http://www.p2pays.org/DMRM/ and will be available in hard copy by mid-August. For more information, or to receive a copy, contact John Blaisdell, RBAC market development specialist, at (919) 715-6522 or (800) 763-0136.

Directory of North Carolina Recycled Products Manufacturers (Updated June 1999)

This directory contains a list of manufacturers within North Carolina that produce recycled content products. For each product listed, a general description and pertinent purchasing information is provided. To obtain a copy of the directory, which will be available by mid-August, please call DPPEA at (919) 715-6500 or (800) 763-0136.



ORDER FORM

To receive a copy of any resources listed above, please complete and return this form to DPPEA by mail or fax [(919) 715-6794]. In the interest of paper conservation, please restrict orders to needed items, and use electronic versions when possible.

Name_____ E-Mail_____

Address_____ City_____ State_____ Zip_____

❍ *E-Mail* me a copy of the items checked below. ❍ *Mail* me a hard copy of the items checked below.

1998 North Carolina Markets Assessment
- ❍Construction and Demolition Debris
- ❍Electronics
- ❍Glass
- ❍Metals
  - ❍Aluminum Cans and Scrap
  - ❍Steel Cans and Scrap
- ❍Oil-Related
  - ❍Used Oil
  - ❍Used Oil Filters
- ❍Organics
  - ❍Food Residuals
  - ❍Yard Wastes
- ❍Paper
  - ❍Old Corrugated Cardboard (OCC)
  - ❍Old Newspaper (ONP)
  - ❍Old Magazines (OMG)
  - ❍Office Paper
  - ❍Mixed Paper
- ❍Plastics
  - ❍PET (#1)
  - ❍HDPE (#2)
  - ❍PVC (#3)
  - ❍L/LDPE (#4)
  - ❍PP (#5)
  - ❍PS (#6)
- ❍Textiles
  - ❍Carpet
  - ❍Post-Consumer Textiles
- ❍Tires
- ❍White Goods
- ❍Wood
  - ❍Wooden Pallets
  - ❍Wood Residues
- ❍**Entire Document**

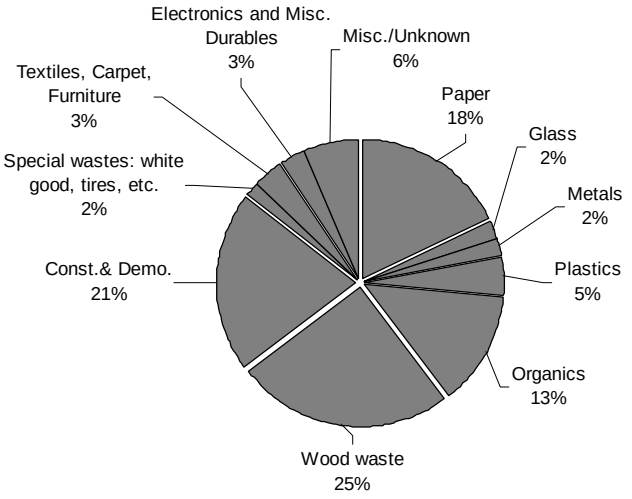
❍**Directory of Markets for Recyclable Materials**

❍**Directory of Recycled Products Manufacturers**

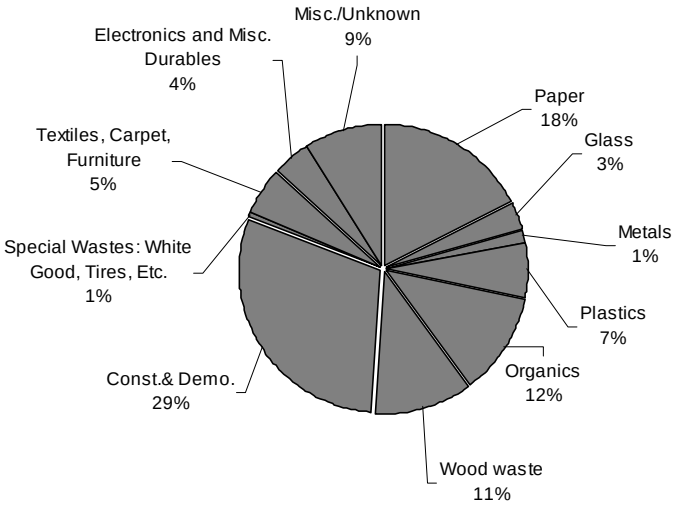
Components of North Carolina's Waste Stream

The two pie charts below display estimates of North Carolina's generated and disposed waste stream for 1997. A comparison of the charts provides insight into recovery successes and shortfalls. For example, wood is a highly recovered commodity, as reflected by the much smaller percentage it represents of the disposed waste stream versus the generated waste stream. Plastics, on the other hand, have a relatively low recovery rate, reflected in its higher percentage of the disposed waste stream versus the generated waste stream.

Estimated North Carolina Generated Waste Stream - 1997



Estimated North Carolina Disposed Waste Stream - 1997



PLACE POSTAGE HERE

JASON HALE
DIVISION OF POLLUTION PREVENTION & ENVIRONMENTAL ASSISTANCE
1639 MAIL SERVICE CENTER
RALEIGH, NC 27699-1639

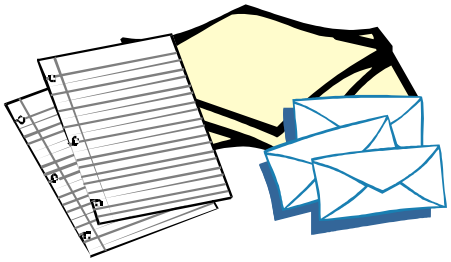
(*See reverse for instructions*)

1998 NORTH CAROLINA Markets Assessment

OF THE RECYCLING INDUSTRY AND RECYCLABLE MATERIALS

Mixed Paper

By Jason Hale, Market Development Specialist



Supply & Demand

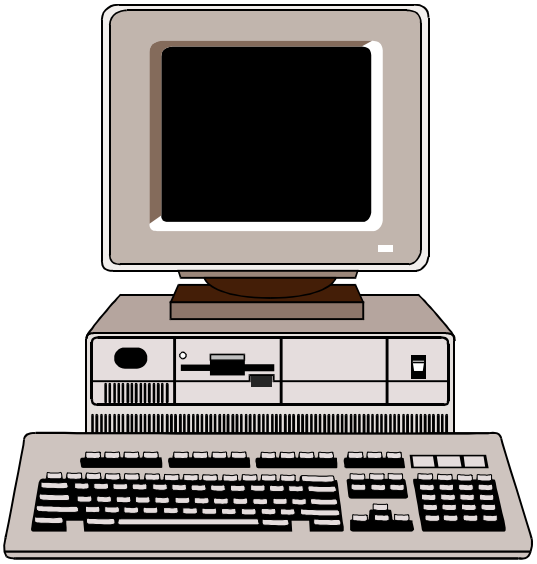
The definition of mixed paper can be extremely broad, and it can include virtually all types of paper generated in offices and a large percentage of papers generated in residences. Some specific materials that are often categorized as mixed paper are discarded mail, telephone books, catalogs, and cereal boxes. Mixed paper represents the lowest grade of paper by value and currently has the lowest recovery rate of all paper markets.

Judging from the depressed prices of mixed paper during the past three years, it can be assumed that the supply of mixed paper in North Carolina and the United States exceeds demand. While loss of production time and contamination problems are likely to continue to hamper the success of mixed paper recycling, the relatively low price of mixed paper and lack of availability for other paper grades are expected to result in increases in demand during the next three years.

See Markets Assessment, Page 10.

Electronics recycling: developing strategies for recovery and recycling

By John S. Blaisdell, Market Development Specialist



This past March, representatives from electronics manufacturing companies and recycling firms and recycling market development specialists met for the 1999 Electronic Product Recovery and Recycling (EPR2) Conference in Washington, D.C. The purpose of this conference was to share information on the recovery of electronic equipment, within both the private and public sectors. Electronics include items such as computers, monitors, televisions, and telephones. In RBAC's *1998 Market Assessment*, it was estimated that computer equipment makes up approximately .6 percent of the waste stream in North Carolina, with approximately 50,000 tons requiring disposal in 1997. There are a number of issues that make electronics one of the hardest waste streams to tackle, including toxicity, quantity, quality, and markets.

See Electronics, Page 11.

Markets Assessment, from page 9

Supply

In 1997, North Carolina generated 678,384 tons of mixed paper. This figure was calculated by applying EPA data on national per capita mixed paper generation to North Carolina's population. In 2002, North Carolina Generation is expected to be 719,849 tons based on projected population increases. This projection assumes no change in the per capita generation rate.

Recovery efforts in 1997 resulted in the collection of more than 115,000 tons of mixed paper in North Carolina. This represents a recovery rate of 17 percent. Private sector recovery accounts for 80 percent of this tonnage. The projected recovery for 2002 — almost 144,000 tons — assumes that North Carolina's recovery rate for mixed paper has reached the projected national average of 20 percent, which seems consistent with potential growth in North Carolina's mixed paper markets.

Demand

Mixed paper is projected to be the fastest growing of the recovered paper grades during the next three years, expanding 3.6 percent annually. This growth suggests that the industry is accepting a broader range of recovered papers, but also that recovery may be reaching maximum achievable levels for some other paper grades.

Factors such as low cost relative to other paper grades and potential availability of large quantities make mixed paper a likely substitute for other fibers. However, the disadvantages of using mixed paper must still be overcome. These disadvantages include loss of production time from paper breaks caused by shorter fibers in the mixed paper, quality problems because of high contamination, and increased rejects, which result in higher disposal costs.

It is estimated that the majority of North Carolina's recovered mixed paper (roughly 53 percent) is used to manufacture recycled paperboard. Exports represent the second largest share of total consumption at 34 percent. The remainder is split between the manufacturing of tissue, printing and writing paper, and all other uses. These other uses include producers of gypsum wallboard, roofing felt, chipboard, and some molded pulp products.

Other uses for recovered mixed paper that are currently being explored include composting with municipal wastewater sludge, grinding for bedding in chicken houses *(See this issue's cover story.)*, and manufacturing of pelletized fuel and paper paneling. It is speculated that these activities may stimulate future demand enough to stabilize the mixed paper market in some regions of North Carolina, and perhaps even justify increased recovery efforts.

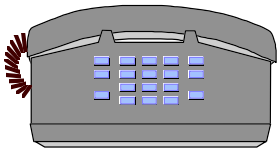
Electronics, from page 10

Get the lead out

First and foremost, the nationwide infrastructure for recovering electronics is being developed to reduce the toxicity of our waste stream. A large quantity of lead is present in computers and monitors. Lead is used in the production of computer chips, and as a protective shield in the glass faceplate of computer monitors. Approximately eight pounds of leaded glass is present in the average color monitor. States with widespread incineration were the first to act on the recovery of electronics, to prevent the lead from becoming airborne. However, states that primarily use landfill disposal are also interested in reducing the lead that could potentially leach into the water table.

Large-scale vs. small-scale

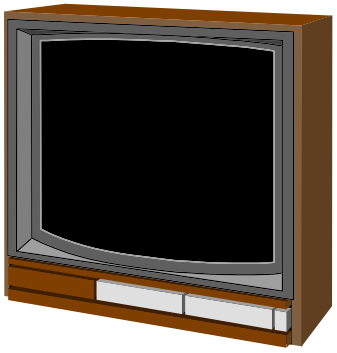
The quantity and quality of electronics varies greatly between large-scale and small-scale consumers. Most vendors involved in electronics recycling for the large-scale consumers provide their clients with what they call "asset management services," where they purchase and refurbish or directly resell as much of their equipment as possible. Large businesses typically have high turnover of relatively standardized electronic equipment, enabling them to get some value out of their materials. Conversely, small-scale consumers typically produce small quantities of non-standardized, grossly obsolete equipment. Thus, there are typically significant costs involved in collecting and processing their equipment.



Recovery options

There are several different recovery options or markets for electronics, depending on their quality and quantity. Computers and their components can be directly re-sold, refurbished and repaired, or dismantled and recycled. Direct re-sale typically yields the highest revenues, while dismantling and recycling typically will cost the owner of the equipment. While direct re-sale and refurbishment are relatively straightforward recovery options, dismantling and recycling is somewhat more complicated. Dismantling and recycling of computers can be as simple as "ripping" computers apart, or as complicated as largely automated grinding and separation processes. Whether through manual or automated separation, the challenge of recycling computers is finding the end markets for the multitude of different components. Among the more difficult markets are the different plastic resin types and colors, and the leaded glass from monitors.

Collection initiatives



Despite the challenges, several residential collection programs have been developed in the United States. Some of the methods include drop-off locations and curbside collection. Project costs have ranged from approximately $500 to $1500 per ton of material collected. Most of these projects were initiated as pilot projects, but several are developing into sustainable programs despite the significant costs. Other state initiatives are being explored including advanced disposal fees and disposal bans. With advanced disposal fees, consumers would pay a fee for every electronic unit ($5 per unit, for example) they purchased. That fee would go to the state to be used for recycling infrastructure development. With disposal bans, recycling is mandated as a way of insuring proper handling of the materials. States that are currently considering disposal bans are primarily states that incinerate most of their waste.

Future responsibilities

The future of electronics recycling depends largely on the industry that makes the product. One development that could assist recovery is an increase in lease programs. With leasing, businesses and individuals will turn over equipment much quicker, rather than holding on to the equipment until it becomes a cost to dispose of it. Also, when electronics manufacturers take back their own standardized equipment, they are much more likely to be able to recover the materials cost effectively either through re-sale or recycling. Another concept that electronic equipment manufacturers are beginning to explore is called design for the environment or design for recyclability. By focusing on the end of a product's life cycle during the manufacturing of equipment, the manufacturers can greatly assist in making recycling easier.

To obtain a copy of the 1998 Electronics Commodity Profile, see page 7 of this issue of *Recycling Works*. For more information about electronics recovery, please call the Division of Pollution Prevention and Environmental Assistance at (919) 715-6500.

Reduce Reuse Recycle

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

Call (919) 715-6500 or 1-800-763-0136 for free technical assistance and information about preventing, reducing, and recycling waste.

North Carolina market prices for recyclables

Prices current as of July 7

Item	Western Region	Central Region	Eastern Region
METALS			
Aluminum Cans, lb. loose	$0.47	$0.42	$0.47
Steel cans, gross ton baled	$15	$8	$10
PLASTICS			
PETE, lb. baled	$0.070	$0.03	$0.07
HDPE, lb. baled	$0.09	$0.030	$0.100
PAPER			
Newsprint, ton baled	$40	$30	$45
Corrugated, ton baled	$90	$50	$90
Office, ton baled	$135	n/a	$145
Magazines, ton baled	n/a	$35	**
Mixed, ton baled	$15	n/a	$10
GLASS			
Clear, ton crushed	$42	$40	$25
Brown, ton crushed	$24	$30	$21
Green, ton crushed	$15	$3	$2

****Facility sells magazines 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

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DPPEA-FY99-04. 2,100 copies of this public document were printed on recycled paper at a cost of $839.48, or $0.40 per copy.

NORTH CAROLINA RECYCLING BUSINESS ASSISTANCE CENTER

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DIVISION OF POLLUTION PREVENTION AND ENVIRONMENTAL ASSISTANCE
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