South Carolina Department of Commerce

SC Recycling Market Development Advisory Council Annual Report February 17, 2005

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February 17, 2006

The Honorable Mark Sanford, Governor
Members of the General Assembly

On behalf of the South Carolina Recycling Market Development Advisory Council, I am pleased to submit its 2005 annual report as required by the South Carolina Solid Waste Policy and Management Act of 1991.

The recycling industry continues to play an important role in South Carolina's economy, and the Council remains committed to addressing policy and strategic initiatives designed to help this business sector be more competitive and grow. Among some of the areas the Council has identified for continued work in 2006 include identifying budget needs and support efforts to secure adequate funding; implementing recycling business and industry incentives including tax reduction and grant funding; insuring the Council is more readily aligned with Commerce's economic development efforts; identifying best practices to advance our mission, particularly in the area of increasing recovery of recyclable materials; and engaging South Carolina's recycling industry as advocates.

We will also continue to work with recycling businesses and economic development professional throughout the state to identify markets not currently being served by South Carolina's recycling industry as well as look at industrial by-products, energy, or other emerging recycling technologies that may represent real business opportunities that can create jobs and increase investment in the state.

Finally, we will continue to promote efforts to engage businesses, government agencies and other organizations to be good stewards of the environment through the Business Recycling Assistance Program.

On behalf of every member of the Council and our valued staff in the Department of Commerce, we thank you for the opportunity to serve the State of South Carolina.

Sincerely,

A. Gerald Fishbeck, Chairman
Recycling Market Development Advisory Council

ACKNOWLEDGEMENTS

The Recycling Market Development Advisory Council wishes to acknowledge the assistance and support provided by the following organizations:

- South Carolina Department of Commerce, Business Solutions Division
- Department of Health and Environmental Control's (DHEC) Office of Solid Waste Reduction and Recycling
- DHEC's Center for Waste Minimization
- South Carolina Manufacturing Extension Partnership
- University of South Carolina
- Clemson University
- EPA Region 4
- Carolina Recycling Association
- Sustainable Universities Initiative

South Carolina's successful recycling market development program would not be possible without the benefits of these partnerships.

INTRODUCTION

The Recycling Market Development Advisory Council (RMDAC) consists of fourteen members, representing industry, local governments, higher education, and the general public (See Appendix A, page 38). Established by the Solid Waste Policy and Management Act of 1991 and appointed by the Governor, the Council formulates programs and policies to encourage markets for new and existing recyclable materials.

Managed within the South Carolina Department of Commerce, the Recycling Market Development staff coordinates the activities of the Council while providing technical assistance and economic development assistance to recycling businesses and industry.

Mission Statement

The Council's mission is to assist in the development of markets in South Carolina for recovered materials and products with recycled content with the primary objectives of improved solid waste management, resource conservation, and economic development.

Guiding Principles

- To meet specific Council requirements contained in the Solid Waste Policy and Management Act of 1991.
- To assure existing and potential recycling businesses of a consistent, cost competitive, quality supply of required recyclables.
- To identify existing barriers to and opportunities for increased recovery and use of recovered materials recycled within the State and take appropriate actions to eliminate or maximize these conditions.
- To monitor and understand the implications of institutional, economic, market, and technical developments both in and out of the state that could measurably influence the generation and use of recyclables.
- To assist in the creation of jobs and investment of recycling industries in the state.
- To maximize the recycling rate within the state consistent with all appropriate environmental and economic considerations.
- To establish and maintain close working partnerships with allied state agencies and councils.

For additional information about the Council and its activities, refer to the S.C. Recycling Market Development Advisory Council Web site at www.sccommerce.com and select "Grow Your Business" to locate the recycling market development program pages.

EXECUTIVE SUMMARY

Since its creation in 1992, the Recycling Market Development Advisory Council has worked to improve the supply of certain recyclable materials where significant demand exists as well as address the market needs for new or emerging recyclable materials. While some materials are readily available for recovery, the key to recycling's success is matching the collected items with businesses that can reuse and/or recycle the materials into new products or services. For other recyclables, the challenge is the collection of the material in order to supply a steady stream to processors.

Strategic planning retreat held to revise annual work plan

In January 2005, members of the Council convened for a strategic planning retreat in Hartsville, South Carolina. During the day-and-a-half meeting, Council members decided to focus its work plan in three distinct areas:

- Raising awareness of the current state of recycling in South Carolina;
- Developing legislative champions to support RMDAC and the recycling program statewide; and
- Revisiting the electronics recycling legislation to determine if any modifications should be made and secure input from local governments, elected officials, recycling companies and other legislative proponents and/or opponents.

It was decided that the established recyclables committee would oversee efforts for the first goal, the policy committee would work on legislative champions and the emerging recyclables committee would revisit the electronics legislation. A summary of each work groups' progress begins on page 7.

Beverage assessment looks at new opportunities for recycling practices

Members of the Council participated in the South Carolina Beverage Container Recycling Assessment, an independent study funded by DHEC, to look at what issues may be contributing to stagnant or declining recovery rates for beverage containers. For the purpose of this study, beverage containers included PET (#1) plastic bottles, HDPE (#2) plastic bottles and jugs, glass bottles and aluminum cans.

The complete report is located in Appendix B (page 34) of this report, but worth noting are the lost economic opportunities that result from these containers going into the state's landfills instead of back into South Carolina's recycling industry. Just looking at two commodities, PET and aluminum cans, there was a lost value of $6.7 million and $5 million, respectively if you calculate pounds not recovered (see table below).

Commodity	Pounds disposed	Average price	Total
PET	43,655,660	$0.155	$6,766,627
Aluminum	11,294,296	0.45	$5,082,433

The Council remains committed to working with the recycling industry and others to increase recovery rates in the state.

Work continues to foster sustainable development and green building initiatives

Building on the successes in 2004, staff continued to work with the Sustainable Universities Initiative, the U.S. Green Building Council's South Carolina Chapter, the State Chamber and the S.C. Department of Health and Environmental Control's Office of Solid Waste Reduction and Recycling to promote activities that foster sustainable practices by the business community and government agencies. Presentations were made to a number of audiences promoting support for sustainability, including members of the State Chamber's environmental technical committee, Commerce project managers, recycling industry representatives and members of the Environmental Excellence Program.

Staff also met with the State Chamber's communications staff to identify ways to further educate State Chamber members about the growing acceptance of sustainable practices. As a result, an article on sustainable practices was printed in the September 2005 issue of the *South Carolina Business Journal* and a link was provided on the chamber's site to the recycling section of Commerce's site http://www.sccommerce.com/recycle.html.

Second Annual Recycling Business Forum and Awards held in Greenville

RMDAC hosted its second annual Recycling Business Forum in September 2005 at the Michelin Conference Center in Greenville. This year's seminar provided information on available business resources, a markets panel discussion, and information on the growth of sustainable development in South Carolina. This year's event also featured an awards ceremony that highlighted the exemplary work of the state's recycling industry as well as recognized companies and other organizations that have embraced a recycling ethic. A copy of the press release recognizing the award recipients is provided in Appendix C on page A-8.

Additional Recycling Market Development Efforts

RMDAC supports policy and initiatives that encourage the expansion of recycling markets, particularly within the private sector. The South Carolina Department of Commerce staff that supports RMDAC provides technical and economic development assistance to recycling companies and other industry in the state.

Some of RMDAC's accomplishments or initiatives from the past year are listed here. Detailed information on these and other projects are provided in the Committee Reports section of this report beginning on page 7.

- Researched the recycled content products manufactured by South Carolina companies for inclusion in new Buy Recycled outreach campaign being developed in cooperation with DHEC's Office of Solid Waste Reduction and Recycling.
- Developed an online, searchable directory of South Carolina's recycling businesses and added to the Commerce web site.
- Continued work with other states and industry to look at alternatives to increase the overall recovery rates for plastic bottles, aluminum cans, glass bottles and other recyclable beverage containers.
- Worked with law students from the University of South Carolina to review sustainable policies and programs implemented in other states to see if they could be replicated in South Carolina as a means of fostering increased support and participation.

2006 GOALS AND OBJECTIVES

The Council held a strategic planning session in December 2005 and decided to revise its mission statement to better reflect the Council's new focus:

The Recycling Market Development Advisory Council's mission is to advocate opportunities to develop sustainable recycling markets, support the growth of South Carolina's recycling industry and advise the state on efforts required to increase recovery of recyclable materials.

Based on this revised mission, the Recycling Market Development Advisory Council has identified two key areas of focus for 2006. These objectives will set the primary agenda for the Council and its committees during the year.

Policy and Strategic Initiatives

- Identify budget needs and support efforts to secure adequate funding
- Implement recycling business and industry incentives including tax reduction and grant funding
- Insure Council alignment with Commerce and economic development
- Identify best practices to advance RMDAC mission, particularly in area of increasing recovery of recyclable materials
- Insure that relevant issues are regularly communicated between DHEC and RMDAC
- Engage SC recycling industry as advocates

Recycling Business and Economic Development

- Identify markets not being served by SC recycling industry
- Identify industrial by-products, energy, or other emerging recycling technologies as business opportunities
- Manage Business Recycling Assistance Program (BRAP)
- Recruit new recycling businesses or create expansion opportunities for existing recycling companies based on targeted research

2005 PROGRAM INITIATIVES

The goals and objectives in last year's annual report are listed below and helped define the Recycling Market Development Advisory Council's work plan for 2005. Three committees comprising RMDAC members and staff, along with support from DHEC's Office of Solid Waste Reduction and Recycling, addressed each of these objectives. The committees were created to address market development issues for recyclable materials currently being collected, new or emerging recyclables, scrap tires and policy issues.

2005 Goals and Objectives

- Raising awareness of the current state of recycling in South Carolina;
- Developing legislative champions to support RMDAC and the recycling program statewide; and
- Revisiting the electronics recycling legislation to determine if any modifications should be made and secure input from local governments, elected officials, recycling companies and other legislative proponents and/or opponents.

In addition, the council tracks the growth and prosperity of the state's recycling industry, which boasts 300 companies that employ nearly 20,000 people and generate an economic impact of $1.4 billion. To demonstrate the breadth of the recycling companies operating in South Carolina, please see the recycling business profiles provide on page A-10 in Appendix D.

ESTABLISHED RECYCLABLES COMMITTEE

Mission

The Established Recyclables Committee is charged with facilitating the recovery of established recycling commodities for reuse by the manufacturing community. This committee encourages the increased collection and use of these materials and looks at ways to overcome barriers to markets.

2005 Summary

Goal: Raising awareness of the current state of recycling in South Carolina.

Based on work conducted by the committee in 2004, the Established Recyclables committee held several meetings with DHEC staff to support a research initiative that would provide information on what the economic impact of not meeting the 35 percent recycling goal had on the state's recycling industry. The committee also wanted to look at best practices used in other states that were achieving a 35 percent or higher recycling rate to see which practices, if any, could be applied by local governments in South Carolina to increase their recycling recovery rates.

After considering the cost of an in-depth white paper on these two issues, DHEC and RMDAC agreed to break the research initiative into two parts, with both groups collaborating on the economic impact study, and DHEC agreeing to take on the role to address best practices and communication strategies to increase recycling numbers in the state. DHEC is in the process of revising its Solid Waste Management Plan for the state, and these research activities will help them as they make recommendations for initiatives to increase the overall recycling rate.

Frank Hefner, an economist and professor at the College of Charleston, is leading the economic impact study to determine what potential in job creation and investment would occur if 25 percent more material was diverted from the state's landfills back into the recycling economy. In addition, he will also forecast the downstream effects of business growth for local communities and potentially identify what counties may see the biggest impact or benefit. This study was just getting underway at press time and final results will be ready in the spring.

Another effort to increase awareness of recycling's economic impact on the state was developing a quarter page print ad that ran in 16 daily newspapers across the state. Recycling companies and allies were recruited to contribute funding for the advertisements (Appendix E, page A-18) that ran in the following newspapers:

Aiken Standard	Hilton Head Island Packet
Anderson Independent	Orangeburg Times & Democrat
Beaufort Gazette	Seneca Daily Journal
Charleston Post & Courier	Spartanburg Herald-Journal
Florence Morning News	The State
Greenville News	Sumter Item
Greenwood Index-Journal	Union Daily Times

In addition, three recycling companies were recruited to participate in the second annual Salute to Small Business, a one-day exhibition that is designed to highlight the important role small businesses make in our state. The recycling companies that participated were:

- Cleanlites Recycling, a fluorescent lamp recycling business in Spartanburg

- Recover Inc., a Greenville-based recycling firm that buys and sells various grades of paper, metal, plastics, pallets and more

- Renew Resources LLC of Rock Hill, a provider of absorbent recycling services

The event was held on May 18, at the SouthTrust Building in Columbia. Members of the legislature as well as the Governor and Lieutenant Governor visited the more than 30 business owners represented at the exhibition.

EMERGING RECYCLABLES COMMITTEE

Mission

The Emerging Recyclables Committee assists in developing markets for emerging or under-collected materials.

2005 Summary

Goal: Revisiting the electronics recycling legislation to determine if any modifications should be made and secure input from local governments, elected officials, recycling companies and other legislative proponents and/or opponents.

History
In its 2000 annual report, RMDAC assessed the impact of scrap electronics in South Carolina. The Council determined the waste generation rate for the state based on electronics sales data and other pilot collection program results. An advanced recycling fee (ARF) model was developed as the primary revenue stream to pay for the development of a collection infrastructure and recycling costs. The study estimated that South Carolinians generate about 2 million units each year. The Council's plan recommended a phased-in approach for addressing infrastructure costs for statewide collection programs, the associated costs for infrastructure development and recycling as well as projected revenue streams necessary to cover these costs.

Since this initial study and recommendation by the Council, a lot of activity has taken place in the last seven years related to promoting the development of a statewide electronics recycling program. A summary of some of this activity is chronicled below:

- Charleston County has established the state's first and only county-wide, permanent e-waste collection program. The county began with a number of one-day collections and based on volumes, slowly expanded collection infrastructure to provide year-round collection of electronics at its recycling collection centers. In FY 2005, the county recovered more than 166 tons of scrap electronic devices. The key to the county's success can be attributed to the $89 user fee the county charges residents to cover its solid waste and recycling programs.

- RMDAC worked with the SC State Surplus Office to identify valid recycling options for their scrap electronics. As a result of these early meetings, the Council jointly hosted with State Surplus and DHEC, a meeting of SC agencies to identify issues associated with proper management of state scrap electronics. This work led to efforts of RMDAC, DHEC, State Surplus, and Chief Information Office to pursue statewide contract for electronics recycling that was finally put into place in August 2004. Since that contract was initiated more than 637 lbs of scrap electronics has been collected from state agencies, public colleges and universities and other publicly funded organizations.

- In 1997 when the council first began looking at electronics recycling, there were no businesses operating in the state to collect, process and recycling discarded electronics. However, staff has provided business development and technical assistance to a number of prospects to help establish an electronics recycling infrastructure. As a result, staff has provided business and economic development resources to electronics recyclers that have invested nearly $10 million and created about 70 jobs.

- Secured $10,000 in grant funding from Dell Inc. to coordinate major electronics recycling collection event in the spring of 2004. The event not only collected more than 103 tons of scrap electronic equipment that would have otherwise been disposed in Midlands' landfills, it raised awareness among residents and policy makers about the need for an

ongoing e-waste recycling collection program. RMDAC worked with a number of community partners including Palmetto Pride, Keep the Midlands Beautiful, City of Columbia, University of South Carolina, Earth Protection Services Inc. and DHEC.

- Participated in national stakeholder meetings of the electronics industry and government representatives to develop national model legislation. NEPSI concluded its three-year work with no formal agreement among stakeholders on who bore the responsibility for funding recycling e-waste. There was disagreement among the electronic manufacturers on what funding mechanism would be best, many opposing advanced fees, viewing it as a tax that would not be equally applied in light of increasing online sales of electronic devices while others opposed the idea of being responsible for implementing a take-back program since recycling was not their core business.

- Coordinated a SC stakeholder meeting on electronics recycling issues and intent behind the proposed legislation, senate bill 178. Attendees included DHEC, local government, electronics recyclers, and representatives from Sony and IBM.

- Met with key state legislators including the Speaker of the House, chairman of Senate Medical Affairs, House Agriculture and Natural Resources, Senate Agriculture and Natural Resources Committees. Many were supportive of recycling e-waste but were not willing to support the fee necessary for funding the development of community recovery infrastructure.

- Several other states have passed legislation, although each state's funding mechanism is different. The Council will continue to monitor California, Maine and Maryland's progress in implementing their e-waste programs as well as proposed model legislation by the Northeast Recycling Council that would establish an electronics recycling recovery plan covering 10 states.

Recommendations

Local markets for scrap electronics have been developed, however, the state still does not offer comprehensive collection programs for the general public and small business community. Citizens are becoming more aware for the need to recycle obsolete electronics, but the vast majority of households in South Carolina do not have access to recycling facilities for their old televisions and computers.

Small businesses are feeling the effect as well when they find that landfills are turning away loads of old TVs and monitors. Electronics repair shops, in particular, are burdened with this problem since these businesses end up with a lot of scrap and no place to take it. Their best option is to have the scrap legitimately recycled but that costs money to make sure the monitors, televisions, and video display screens are recycled appropriately.

RMDAC recommends the following:

- Continue efforts to educate legislators, expand this list of potential supporters;

- Continue to identify and educate potential stakeholders such as repair shops as to the need for a state-wide electronics recycling program with a dedicated funding source; and

- Encourage DHEC to support and communicate the need for comprehensive electronics recycling in South Carolina.

POLICY COMMITTEE

Mission

The Policy Committee assists RMDAC and its committees in implementing strategic market development policy and programs, giving consideration to legislative, governmental and private sector concerns.

2005 Objectives

Goal: Developing legislative champions to support RMDAC and the recycling program statewide.

Part of the plan to address the current state of recycling was to share this message with key allies, supportive legislators and others who can affect the future progress of recycling in South Carolina. The Council's activities have typically focused on working with representatives on the Agriculture, Natural Resources and Environmental Affairs committee in the House and the Senate's Agriculture and Natural Resources committee. While work will continue to target those legislators, there is still a need to bring in some other supporters from outside these committees to continue to promote the important impact recycling has on the state's economy.

As part of this committee's work and as an outgrowth of comments made at the 2004 Recycling Business Forum, the Policy committee held a couple of meetings with various stakeholders, including recycling business owners and members of the State Chamber's environmental technical committee, to look at what issues may help increase participation in recycling programs overall and discuss the benefits of potential incentives for the recycling industry as well as general business community to further support recycling operations and participation. Some of the concerns communicated included:

- Regulatory issues and barriers, such as lack of composting regulations, stronger enforcement, and need to revisit ban on used oil filters;
- Increased communication and promotion of recycling, not just a message saying it's good to recycle but also what, how, when and where;
- Greater financial assistance for the recycling industry, from looking at expanding incentives to include recycling companies to possibly establishing a low-interest loan fund to help recycling businesses with research and technology opportunities;
- Cooperative marketing of materials/industrial by-products by region;
- Fostering market development efforts for emerging materials such as mercury waste to more established products like pallets that still are not highly recycled in some areas of the state;
- Reviewing the existing infrastructure for recycling collections to see if barriers exist that hinder increased supply; and
- Working to encourage more state government support of recycling through increased collections as well as more green procurement.

RECYCLING MARKET DEVELOPMENT STAFF ACTIVITY

In addition to the Council's committee activities, the Recycling Market Development staff continued its work to assist new and existing industry in South Carolina and promote waste reduction and recycling opportunities. Housed within the Business Solutions Division of the Department of Commerce, RMDAC staff provides business development and technical assistance to the recycling industry as well as market referrals and recycling support to members of the state's business community, publicly-supported agencies and other organizations interested in reducing waste disposal costs.

Direct assistance was provided to 382 industries and governmental entities by the RMDAC staff. Referrals from Business Solutions and Business Development staff as well as other economic development allies, environmental organizations and DHEC still generate numerous requests for assistance in recycling and waste reduction, and RMDAC staff followed up with these requests as part of the South Carolina Business Recycling Assistance Program (see below).

Of the businesses assisted in 2005, 124 were recycling companies that were provided assistance with business development planning, product marketing and accessing financial, regulatory, or other resources. There were 18 active leads considering starting new businesses, establishing an additional facility in South Carolina, or expanding existing in-state operations, and an additional 42 requests by individuals wanting more information about starting a recycling business.

Second Annual Recycling Business Forum

Based on the success of its first forum, staff coordinated the second annual South Carolina Recycling Business Forum in September 2005 at the Michelin Conference Center in Greenville, South Carolina. Once again, more than 60 representatives from the recycling industry attended the expanded session that included presentations on available business resources, recycling market trends, sustainable development and green building as well as information from recycling allies. There were also 10 companies that exhibited at the event, demonstrating the breadth of recycling opportunities in the state.

The program also featured an awards ceremony that recognized leaders in the recycling industry as well as companies that had embraced waste reduction and recycling activities as part of their operations. The winners are listed below:

- **Earth Protection Services, Inc.** - Best Small Recycling Company
- **Mid-Carolina Steel & Recycling** – Best Medium Recycling Company
- **Nucor Steel, Berkeley** – Best Large Recycling Company
- **Greenville County** – Best Office Recycling Program
- **S&T Grading and Excavation** – Best C&D Recycling Program
- **Chicago Pneumatic Tool Company** – Best Small Industry Recycling Program
- **Alcoa Mt. Holly** – Best Large Industry Recycling Program

The Collins Home and Family Ministries received honorable mention recognition for their efforts to recycle paper and cardboard in a tri-county area of the Upstate, and long-time RMDAC member Clarence "Red" Hermann was honored for his distinguished service on the Council.

Online directory of recycling businesses

To further assist companies, government agencies and other interested organizations requests for recycling assistance, staff developed an online, searchable database that visitors to the Commerce web site can locate information on recycling businesses through a number of ways – by county, by material or by company name.

The directory incorporates the 300+ companies recorded on the recycling business database at Commerce, providing contact information, business type (hauler, manufacturer, processor, etc.), materials accepted or collected by category, and any additional material handling. It also helps promote companies that make products made from recycled content – a tool that will enable consumers to research products to help them meet their Buy Recycled goals.

The directory is located at http://www.sccommerce.com/SearchRecycling.aspx.

South Carolina Business Recycling Assistance Program

The South Carolina Business Recycling Assistance Program (B-RAP) continues to provide free technical assistance to business and industry throughout the state. A partnership of DHEC's Center for Waste Minimization, the Office of Solid Waste Reduction and Recycling and RMDAC, the program provides a variety of technical assistance opportunities to businesses, industry, government agencies and others in four specific areas: waste reduction, recycling, buying recycled, and recycling markets/market development.

In addition to its core activities of providing market referrals and onsite assessments, the B-RAP partners were engaged in the following related activities:

- Development of a new SC Materials Exchange web site to better facilitate the reuse of unusual or high volume materials that may be generated. The site also lets visitors post listings for materials they may want to obtain for use as feedstock or a more environmentally-friendly substitute for raw materials. The site is accessible at http://www.scdhec.gov/lwm/scme/;
- Airing of a new television public service announcement in May and July to promote the benefits of recycling at work;
- Continued presentations and exhibitions featuring the fluorescent lamp recycling outreach initiative funded by a grant from the U.S. Environmental Protection Agency;
- Educational materials, including topic-specific fact sheets and posters, bi-monthly *B-RAP News* electronics newsletter and a major overhaul of the B-RAP web site (www.scdhec.gov/brap.)

Buy Recycled Initiative

In response to comments made at the Recycling Business Forum in 2004, staff researched and developed a new series of fact sheets that stress the importance of buying recycling content products. These facts sheets described the benefits of green procurement, including the important roles both the government and private sector can play in keeping demand for these products high and creating stable if not growing markets for the materials recovered through residential and commercial recycling efforts. One highlighted common definitions of recycled content products, one addressed common misconceptions about performance and quality issues associated with recycled products, another demonstrated how to develop and implement a buy recycled policy for one's workplace, and another that provides online resources to help companies and government agencies research and purchase recycled products.

Working with DHEC's Office of Solid Waste Reduction and Recycling and the Materials Management Office of the Budget and Control Board, Commerce is participating in discussions to encourage the adoption of a state buy recycled policy that all public agencies and institutions would be required to use. There are also discussions on how the state will manage recycled purchases upon the closure of the General Services Central Supply, a major procurement source for recycled goods. Other issues being addressed include revising procurement paperwork to make recycled products more prominent and looking at feasibility of placing commonly purchased recycled products on the prime vendor contract instead of a separate

contract for recycled goods. While these discussions are still in the early stages, the potential results of more emphasis and enforcement of recycled purchasing could play a significant impact on the state's recycling industry.

Southeast Recycling Development Council

The mission of the newly formed Southeast Recycling Development Council is to unite industry professionals, government agencies and individuals engaged in the business of recycling to foster communication among these groups, to promote sustainable recycling programs and to coordinate educational and public awareness activities related to recycling.

SERDC's goals include increasing the collection and recovery of quality recyclable materials, fostering economic development opportunities via the recycling industry, creating greater awareness of the recycling industry's impact on the southeast region and participating in any activities that support the council's mission.

RMDAC staff have been actively involved in the formation of this new organization and looks forward to participating in its future activities.

Other Activities

Staff members actively participate as members of the following organizations or councils:

- Carolina Recycling Association
- CRA Midlands Networking Council
- South Carolina Resource Conservation Challenge Task Force
- Solid Waste Advisory Council
- Waste Tire Committee
- South Carolina Solid Waste Association of North America
- South Carolina Economic Development Association
- Keep the Midlands Beautiful

REQUIREMENTS OF THE 1991 SOLID WASTE ACT

The Solid Waste Policy and Management Act of 1991 requires that the Recycling Market Development Advisory Council consider the following elements in its annual report.

Any Revisions Which the Council Determines are Necessary to its Initial Report

There are no revisions to be added at this time.

A Description and Analysis of the Amounts and Types of Solid Waste Materials Recovered or Recycled in This State During the Preceding Year

Recycled materials reported in Tables 1 and 2 are compiled by DHEC from its annual county solid waste survey. Figures are reported on a fiscal year basis for a period of July 1 through June 30. Data reflected in this report is from FY 2005.

Table 1 shows the amount of recyclable material collected by local government programs, primarily serving residential households in South Carolina. This category is considered to be post-consumer material.

Table 2 includes totals reported to counties by local business and industry as well as the post-consumer totals shown in Table 1. These numbers are not consistent from year to year since counties rely on local industry to provide totals. And in some cases, counties don't actively retrieve this information from industry.

As shown in Table 1, recycling rates for the various post consumer categories declined except for paper which grew slightly by 5% in 2005. Table 2, which includes some post consumer and post industrial numbers, shows dramatic increases and declines in the major categories. Market demand and pricing for the most part has been strong for the basic commodities. These post consumer totals may confirm the fact that recycling has reached a plateau in terms of the amount of material that can be recovered through the existing collection infrastructure in South Carolina.

The metal recovery rates seem appropriate since the significant recycling of the material goes on at the post industrial and commercial level. Table 2 shows a large increase for this category.

Total banned items increased by 27% this past year, with the large portion of this being yard waste. Yard waste can be affected by seasonal variations as well storm activity.

The bar charts on page 21 reflect five-year recycling trends for the basic commodities of paper, plastic, metal, and glass. Future recovery rates for these materials would appear flat, based on historical trends. However, paper collection rates should trend upward, particularly if more cardboard recycling programs are implemented by local governments. The demand continues to be strong for all paper grades.

Recommendations Regarding Materials Which Should be Added or Deleted From Source Separation, Recovery, and Recycling Programs

Scrap electronic equipment and construction and demolition debris (cardboard, metals, concrete, and untreated wood) should continue to be promoted as recyclable materials with local markets in South Carolina.

Recommendations, Including Tax Incentives, to Facilitate the Development of Markets for Recovered Materials or Products in This State

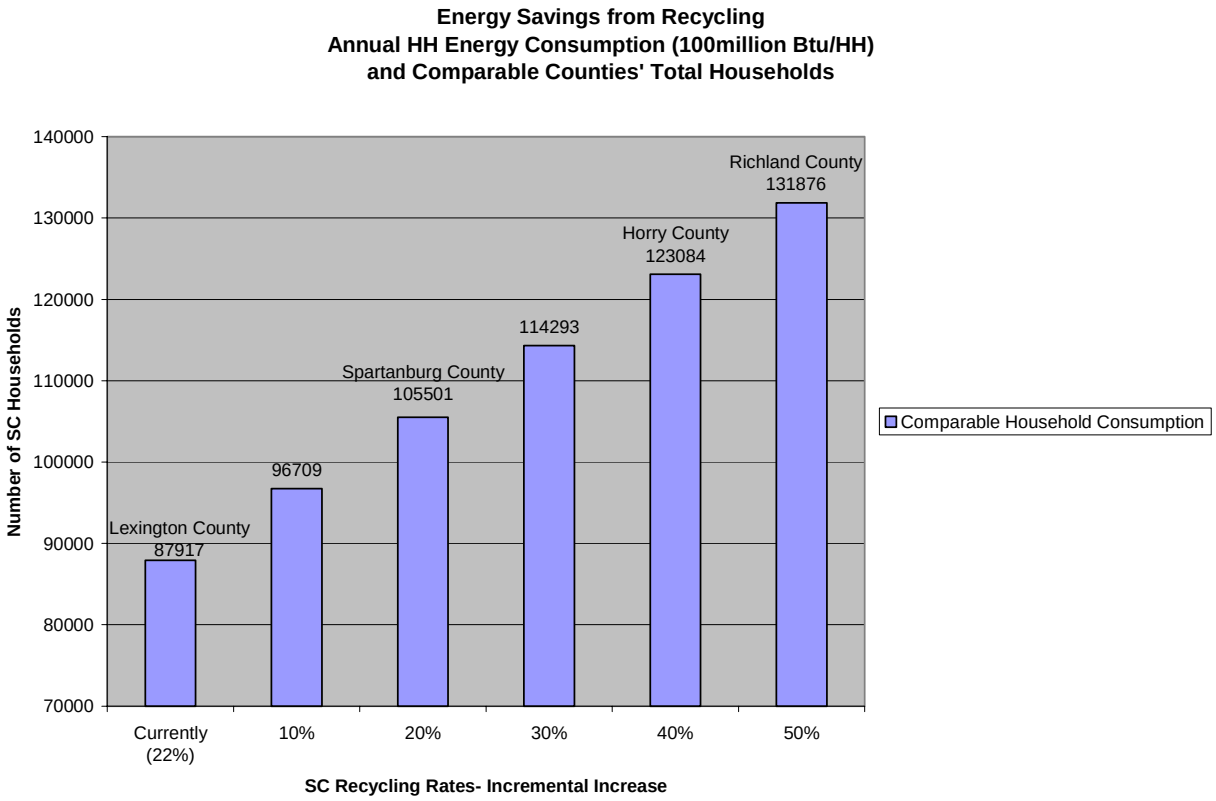
Exempt recycling equipment from local property taxation.

Recycling businesses impact economy and help save energy

Recycling companies employ 20,000 people with an annual payroll of $712 million resulting in a 1.4 billion economic impact in the state. They include manufacturers of products using recycled materials, companies that transport, process or add value to recovered waste materials, recycling equipment manufacturers, re-manufacturers, and brokers. In addition to the direct economic impact, this important business sector provides invaluable service to our industry statewide.

Recycling businesses not only create jobs, but their work directly results in resource conservation and energy savings. An EPA study[1] documents the Btu savings associated with recycling various commodities such as paper, plastic, metals, glass, etc. When applied to current SC recycling rates, which is currently at 22%, the energy savings numbers are quite impressive. Figure 1 shows the energy savings in terms of the number of average household Btu consumption. As the chart shows the current recycling rate saves enough energy for all the households in Lexington County for one year. Significant energy savings can be achieved as the recycling rate improves, projecting that a 50% improvement or a 33% recycling rate, could save enough energy to power over 131,000 homes, which is about the size of Richland County.

[1] "Waste Management and Energy Savings: Benefits by the Numbers: by ICF Consulting and U.S. Environmental Protection Agency



Accelerating the Growth of Recycling Businesses

Tax incentives are an important tool in maintaining and attracting new jobs and investment in South Carolina. Manufacturing operations, which includes certain recycling companies, are eligible for the existing statutory incentives based on job creation and investment, but some recycling processors may not be eligible for these incentives. A proposal to encourage investment and job creation among these recycling businesses should be considered.

With transportation costs on the rise, the need to expand local markets is becoming even more important. Some recovered materials still go to out-of-state markets and the higher gas prices are cutting even further into the already tight profit margins, possibly resulting in a disincentive to recycle these commodities. Tax incentives will encourage growth of new and existing recycling companies in SC and expand local markets for recyclable materials.

Proposed Incentive

In South Carolina, pollution control equipment is exempt from property taxes. This is typically equipment a company installs as required by state or federal environmental regulations for controlling air, water and wastewater emissions. Other states have similar incentives but the definition includes a broader range of equipment for environmental protection purposes. North Carolina exempts real or personal property used exclusively for recycling or resource recovery of or from solid waste from property tax. Expanding South Carolina's definition of pollution prevention equipment to include recycling equipment will go a long way in encouraging the growth of this important industry sector.

Other industry sectors would benefit as well. Recycling incentives would encourage companies to invest in research and development of technology, as well as basic equipment, to recycle their waste and by-products. These companies can become more competitive by lowering their waste disposal costs and potential liability.

Return on Investment

- Create jobs and investment through growth of recycling industries
- Improve bottom line for recycling businesses
- Stimulates both supply and demand for recyclable materials
- Encourage other SC industries to invest in recycling equipment and technology
- Help manufacturers use lower cost raw material
- Help ISO rated companies achieve environmental and sustainable goals
- Save energy and conserve natural resources

Table 1
Post-Consumer Recycled Materials
(Reported by County/Residential)
Tons

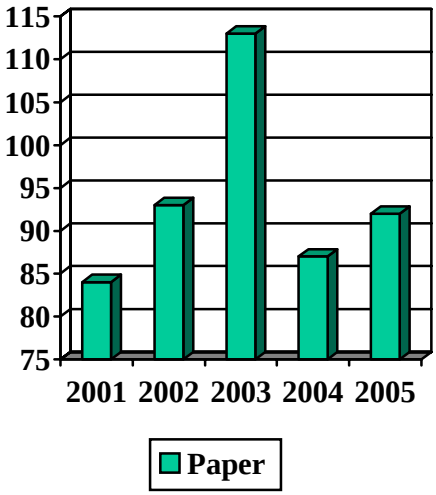
	2005	2004	Percent Change
Paper	91,622	86,793	5%
Metal	35,174	35,547	-1%
Glass	9,316	9,544	-2%
Plastic, total	5,540	6,141	-10%
#1 PET	1,867	1,916	-2%
#2 HDPE	1,616	2,359	-31%
Mixed	2,057	1,867	10%
Banned[1], total	252,007	198,494	27%
Lead acid batteries	1,816	2,675	-32%
Used oil[2]	4,127	8,470	-51%
Waste tires	20,919	20,198	4%
White goods	30,295	34,983	-13%
Yard waste	195,117	132,168	47%

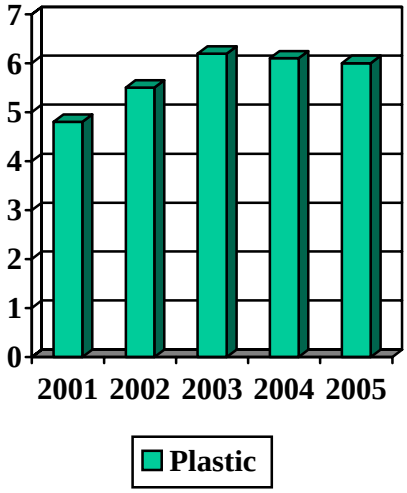
Table 2
Total Recycled Materials
(Reported by County/Residential, Commercial, Institutional/Non-Profit, Industrial)
Tons

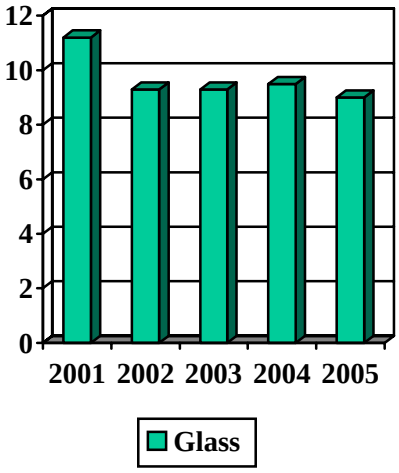
	2005	2004	Percent Change
Paper	636,762	1,987,683	-68%
Metal	1,860,699	883,498	110%
Glass	12,139	18,860	-36%
Plastic	116,520	88,605	31%
Banned	599,630	354,492	69%

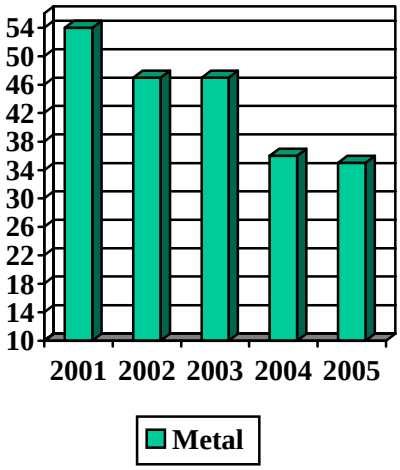
[1] Banned items include tires, oil, lead-acid batteries, yard waste and white goods.
[2] According to DHEC, oil numbers compiled from counties are collected on fiscal year calendar while numbers reported by Santee Cooper are on calendar year. Santee Cooper's DIY numbers also include collections from farmers and commercial enterprises which may account for discrepancy.

South Carolina Post-Consumer Recycling
Five Year Trends[1]
(Tons)









[1] Quantities are based on data from Table 1, reported in 1000 ton units

MARKETS UPDATE

Industry representatives on the Recycling Market Development Advisory Council provided the following market updates. These include the primary commodities typically recovered in most municipal and county recycling programs as follows:

Glass	clear, brown, green
Paper	newspaper, corrugated
Plastics	PET, HDPE – clear and pigmented
Metal	ferrous and non-ferrous metals
Used Oil	oil, filters, bottles
Tires	

Each update will consist of the following four sections, which include comments on the basic market factors of supply, demand and pricing for each recovered material.

2005 Summary

A discussion on major changes in supply, demand and pricing for this material that have occurred during the past year, including both national and state perspectives with explanations of significant differences between the two.

2006 Outlook

Forecasts for the coming year and circumstances impacting supply, demand, and pricing for the material relative to 2005 conditions.

Future Trends

A discussion of long term trends in supply, demand and pricing beyond 2005.

RMDAC Action

Actions that this Council should consider to improve market factors.

GLASS

2005 Summary

Glass collected in South Carolina for recycling is sent to two regional processors -- Strategic Materials in Georgia and Container Recycling Group in Raleigh, NC. Market demand has been steady, with prices averaging at $35/ ton for clear, $27/ton for brown and $10/ton for green.

2006 Forecast

Glass demand in the Carolina's and around the country will be strong this year for all colors. Energy prices are driving glass plants to use more cullet, which is good for market demand. Instead of stockpiling glass, recyclers should be able to move all grades on a regular basis. Unfortunately, higher demand does not translate into higher prices. Steady demand for recycled glass will continue throughout 2006.

Pricing or tip fees for commingled glass should not change year to year. There are no closings scheduled for bottle plants in the southeast. Most, if not all plants, are sold out for the entire year. No new plants are scheduled to open.

In terms of new markets, there are always specialized players that show propose to make concrete blocks or other products out of glass cullet. So far they have been very small players with low demand and lower prices.

RMDAC Action

RMDAC should continue to support programs that increase the overall recovery rate of recyclables in South Carolina as well as encourage communities to look at alternative markets for recovered glass.

PAPER

2005 Summary

The market for old corrugated cardboard (OCC) started the year at $85 per ton and held steady until October before taking a steady decline, finishing the year at $55 per ton. This decline was led by Weyerhaeuser announcing that it will close its recycled product mill in Plymouth, NC. This mill was consuming nearly 500 tons per day of recycled fiber, and its closing will put some 15,000 tons per month on the open market in the Carolinas and Virginia, with no domestic mill to consumer this volume. In addition, export demand for OCC was steady throughout 2005.

Demand for newsprint was strong the entire year. Newsprint started the year at $70 per ton and finished at $75 per ton. Most of the year the market was in the $85 per ton range, but the slight decline is attributed to less clean news available as more communities go online with single stream recycling.

Mixed paper markets had another strong year, where in the past it has really struggled to survive. Pricing went back and forth between $40-45 per ton all year. Asian boxes are now sold as this grade. High grades had steady demand all year, with prices rising from $85 per ton to a high of $100 per ton. This grade will continue to be monitored as more material continues to be generated through document destruction.

2006 Forecast

Expectations are that export demand will continue to grow out of the Southeastern United States. China continues to lead to the market, and India is expected to make a strong push for fiber as new machines are going online in that country. Forecasters will watch for the impact of Vietnam entering the global economy.

Future Trends

The added demand of export markets should result in OCC prices rising into the $80 -100 per ton range before the end of 2006. Domestic and export demand for newsprint should remain in the $70 – 85 per ton range in 2006 while high grades should increase to $100 per ton or better. Mixed paper markets will continue to stay strong as domestic mills continue to use this fiber as a substitute for OCC and newsprint.

RMDAC Action

RMDAC will continue to work closely with DHEC and the Carolina Recycling Association to increase collections and to develop new markets.

PLASTICS

2005 Summary

PET Summary

According to recently published 2004 recycling rate from the American Plastics Council (APC), 1,003.4 million pounds of PET bottles were recycled out of 4,637 million pounds sold for a recycling rate of 21.6%. The rate rose 2.0% from 2003 recovery levels. Gains in bottle recovery are attributed to a number of factors, including increased value of recycling plastics, an increase in single- stream collection programs, new public education campaigns and a revival of recycling in New York City.

Demand continued to grow for recycled PET bottles during 2005 from domestic recyclers far outstripping supply. Export buyers appeared to be less of a presence in U.S. markets than during 2004.

2006 PET Outlook

The PET market continues to see a growth in new colors and barriers used in beverage bottles that are not compatible with traditional recycling processors. The additional growth of single-serve containers in water, juice, tea and new age drinks will cause further reductions in recycling yields unless investments are made in process improvements to adapt to the changing beverage industry. Increased attention by all stakeholders, including recycling processors, state and federal government agencies, and the beverage industry, needs to continue to address lackluster growth in recycling rates.

HDPE Summary

HDPE also increased to 904.2 million pounds recycled out of 3,486 million pounds sold for a recycling rate of 25.9% in 2004. Total recycled pounds increased 81 million pounds over 2003. Non-food bottles led uses in the domestic market for recycled HDPE at 41 percent followed by piping at 21% according to APC.

Demand far outstripped supply during 2005. The damage to HDPE capacity by hurricanes put further pressure on shortages of raw material for recycled markets. Exports remained less of a presence with the majority of demand coming from domestic recyclers.

2006 HDPE Outlook

Demand will continue to far outstrip supply as further growth is expected in packaging, plastics lumber and automotive applications. Pigmented PET in colors as a contaminant still is a major issue to quality production going into 2006.

Future Trends

Consolidation is occurring in the PET industry. Eroding margins due to cheaper imported products from Asia will continue to pressure margins on traditional recycled products. The growth in overall demand for recycled products both domestically and for export will continue to far outstrip supply. Focus on increasing supply by recycling processors, state and federal government agencies and the beverage industry must remain a high priority.

RMDAC Action

RMDAC will continue to work closely with DHEC and the Carolina Recycling Association to increase collections and to develop new markets.

FERROUS METAL

2005 Summary

This may not have been the best year for ferrous metal (the title for best ever may always remain with the year 2004) but it probably rates a strong second place finish as prices for most of the year remained well above historical averages.

Volatility continued to characterize the market as ferrous prices endured dramatic fluctuation from month to month. The first half of the year was practically a straight run downhill; prices corrected themselves from the all-time high established in November 2004. But by summer prices had fallen too far, too fast as the variable price-sensitive supply of scrap (obsolete material) disappeared at the same time that the relatively predictable supply (industrial material) entered its seasonal slowdown. The result was a tightening supply of available raw material to feed strong demand for domestic and global steel production. Prices peaked again in November at which time the next downward cycle began.

The demand for scrap remained firm throughout the year, with price increases and decreases predominantly driven by changes in supply. Interest rate hikes, rising energy prices and disruption to shipping channels in the Gulf Coast did not derail growth in the steel sector or even the domestic economy as a whole.

2006 Forecast

The expectation for 2006 is that it will be another good year for ferrous metal, but few would anticipate a repeat of last year in the same way that 2005 was not as strong as 2004. The market seems to be returning a more stable pattern as indicated, a tighter price range and more moderate monthly price changes. Prices are likely to remain above traditional levels but with less volatility. As supply comes into balance then the demand for scrap will begin to drive prices. Look for a healthy economy and a healthy scrap market for 2006.

Future Trends

Consolidation will continue in the steel industry and fewer companies will produce increasingly larger shares of both scrap metal and finished steel. The Southeast will become more important for ferrous metal as new industry, especially automotive, moves into the area. An additional steel mill that will add capacity to the region is already under construction in Mississippi. Export markets, especially China, will still play an important role as scrap metal will remain a global commodity traded in the world market.

RMDAC Action

RMDAC will continue to promote and encourage recycling activities that will increase the recovery of scrap metal. Metal recycling is more economically viable than ever with higher prices and there is available capacity to handle all industrial and consumer scrap within the state.

NON-FERROUS ALUMINUM

2005 Summary

Aluminum prices reached historical highs as demand rose at its fastest rate in more than 20 years, helped by further strong demand in China and a strong recovery in the United States because of increased economic activity.

Prices for recycled aluminum followed primary prices throughout the year. Aluminum used beverage containers (UBCs) are currently averaging $0.60-0.65/lb. U.S. primary production rose 5.2% from 2004 levels while demand increased 1.6%. One domestic smelter (Frederick, MD) was idled in December due to high power costs and ongoing pressures in the Northwest threaten the remaining capacity still operating in the region.

Americans and the can recycling industries recycled 51.5 billion aluminum cans (1.51 billion pounds) in 2004, for a beverage can recycling rate of 51.2%. This reflects the first increase since 1997. The aluminum beverage can is the most recycled consumer beverage container in the United States. It amounts to more than twice the recycling rate for beverage packages of other materials.

Global demand for aluminum should continue to outstrip supply. Global inventories have fallen by 50% from 2001 levels.

2006 Forecast

The outlook is positive for the aluminum industry based on continued improvement in supply and demand and a higher metal price, but strong gains will be offset by increasing raw material and energy costs. Analysts expect demand to jump by 6.2% in 2006, outpacing an expected 4.7% gain in production.

Longer term, aluminum consumption is expected to double between 2005 and 2020, driven by demand growth in Brazil, Russia, India and China. By 2020, Asia is expected to consume as much aluminum as the world does today.

Future Trends

The energy value (95%) that can be reclaimed through recycling continues to make aluminum one of the most attractive and profitable materials for recycling. As with any commodity, trading is now a global business. Any unexpected changes in production requirements domestically, the worldwide value of the dollar, or significant shifts in the export market, will affect pricing.

RMDAC Action

With an established recycling infrastructure in place (both private and municipal), the Council should continue to educate and encourage local governments, private citizens, and industry to recover more aluminum and other non-ferrous metals. These materials are typically the foundation for municipal recycling programs as income generators, and efforts should continue to increase collections.

USED OIL

2005 Summary

The statewide used motor oil recycling program targeting do-it-yourselfers (DIYers; those who change their own oil) continues to flourish. Through a combination of technical assistance and grant funding for local governments, South Carolina has developed one of the nation's most comprehensive used motor oil recycling programs for DIYers.

According to figures compiled by the S.C. Department of Health and Environmental Control's Office of Solid Waste Reduction and Recycling (Office), DIYers recycled 1,164,835 gallons of used motor oil in (calendar year) 2004. This marks the sixth consecutive year that more than 1 million gallons were collected. Overall, more than 11 million gallons have been collected from DIYers since used motor oil recycling efforts began in South Carolina in 1990. Figures for 2005 were not available when this document was prepared.

The recycling of used motor oil filters reflects a significant environmental protection program considering that each filter may contain from four ounces to one quart of oil if not properly drained. In fiscal year (FY) 2004 (July 1, 2003 – June 30, 2004), DIYers recycled 321 tons of used motor oil filters – an increase from the previous FY when 186 tons of used motor oil filters were recycled. In addition, several counties now collect and market used motor oil filters with their large appliances and/or other metals. With this being the case, not all used motor oil filters that are being recycled are being counted directly. Some may be included in the numbers for large appliances and/or metals.

The recycling of motor oil bottles also offers an important environmental protection program considering that they can contain up to an ounce of oil each if not thoroughly drained. In FY 2004, DIYers recycled more than 64 tons of motor oil bottles – a 33% increase from the previous year. In addition, most counties now collect and market motor oil bottles with other pigmented HDPE plastic. As a result, many of the motor oil bottles that are being recycled are being counted in the HDPE plastic rather than the motor oil bottle numbers. From 2003 to 2004, the amount of HDPE plastic being recycled increased by more than 2,200 tons.

Introduced in January 2000, the Office continues to offer the "Green Driver Project" that targets students in high school driver education classes. The project stresses the environmental impact of driving and includes information on recycling used motor oil, filters and bottles, energy conservation, ground-level ozone prevention and other environmental tips. The Project serves as a lifelong lesson in environmentally responsible driving. Since the Project began, staff made 1,139 classroom presentations to 51,719 students. "DHEC 1: Behind the Oil Change," a video chronicling the life of a driving teenager and the consequences of his decision to improperly dispose of his used motor oil, debuted in Summer 2002. The video has been extremely well accepted and received an In-Show Award that honors excellence in advertising and public relations. The video also won an Emmy Award from the National Academy of Television Arts and Sciences. In addition, the Office set up a partnership with Palmetto Pride to add a litter component, including litter laws and enforcement, beginning in 2002 to the "Project."

Due to the unique problems of recycling used motor oil filters, the Office continues to work with vendors – scrap metal yards and steel mills – that accept filters. Ongoing negotiations with vendors to ensure continuing markets are an integral aspect of the used motor oil program.

2006 Forecast

The amount of used motor oil, bottles and filters collected for recycling should continue to grow in 2006. The priorities of the Office regarding its used motor oil recycling program are:

- To continue to collect motor oil bottles. Most counties are using oil drain racks to drain the bottles and make them easier to process. Once drained, the motor oil bottles can be mixed with other HDPE plastics. This makes it easier to market the motor oil bottles. The Office will continue to encourage all counties to use the oil drain racks.

- To add farmer oil collection tanks where needed. Farmer oil tanks are now at 37 oil collection sites in 30 counties (Abbeville, Aiken, Anderson, Barnwell, Cherokee, Chesterfield, Clarendon, Darlington, Dillon, Dorchester, Edgefield, Fairfield, Florence, Georgetown, Greenville, Greenwood, Hampton, Horry, Kershaw, Lancaster, Lee, McCormick, Newberry, Oconee, Orangeburg, Pickens, Sumter, Union, Williamsburg and York). Five more counties will be setting up tanks in FY 2006. Each of the tanks holds at least 550 gallons of used motor oil and is fitted with a pump and hose to make it easier for farmers to recycle up to 55 gallons of used motor oil at one time.

- To continue to expand the oil/gasoline mixture collection program by adding collection tanks where needed. There are currently 44 oil/gasoline mixture sites in 32 counties (Aiken, Allendale, Anderson, Barnwell, Beaufort, Berkeley, Calhoun, Charleston, Cherokee, Clarendon, Colleton Dorchester, Edgefield, Fairfield, Georgetown, Greenville, Greenwood, Hampton, Kershaw, Lancaster, Lee, Lexington, McCormick, Newberry, Oconee, Orangeburg, Pickens, Saluda, Spartanburg, Sumter, Williamsburg and York). Three more counties will be setting up tanks in FY 2006.

- To secure and maintain markets or other uses for used motor oil, bottles and filters.

Future Trends

The Office will continue to provide grant funding to local governments to set up, maintain and improve used motor oil recycling programs. The Office also will continue its statewide awareness campaign on used motor oil recycling including the national award winning “Recycle Guys” public service announcements and the “Green Driver Project.”

RMDAC Action

The Recycling Market Development Advisory Council should continue its work promoting, supporting and securing markets for the state’s used oil recycling program.

TIRES

2005 Summary

Scrap tire markets in South Carolina and the region remained healthy in 2005. According to our annual Tire Recycling Survey of DHEC-approved tire processors, the major portion of SC scrap tires were processed for two primary markets; tire derived fuel and drain field aggregate.

The survey of scrap tire facilities and processors shows that 8.2 million South Carolina scrap tires were recycled into a variety of products in 2005. This includes 6.7 million post consumer tires and 1.5 million post industrial tires (manufacturing scrap). The table below provides a comparison of the number of tires processed and end-market utilization over the past seven years.

SC Tire Market Analysis

	1998	1999	2000/01	2002	2003	2004	2005
Tires processed (millions)	**3.34**	**3.99**	**8.0**	**6.9**	**7.0**	**7.1**	**8.2**
Septic drain field	**80%**	**88%**	**52%**	**42%**	**26%**	**27%**	**30%**
Tire derived fuel (TDF)	**13%**	**10%**	**34%**	**35%**	**58%**	**58%**	**56%**
Crumb rubber	**1%**	**2%**	**4%**	**14%**	**7%**	**4%**	**12%**
Civil Engineering	**0**	**0**	**9%**	**1%**	**5%**	**11%**	**2%**
Landfilled	**6%**	**0**	**0**	**8%**	**4%**		

TDF continues to exceed tire shreds for drain field applications. This confirms the trend over the past five years in moving toward higher end value products derived from scrap tires. Previously the greatest use of scrap tires in South Carolina was tire shreds used as drain fields for septic tank systems. The average price for tires shreds is $15 per ton. More recently the market has shifted to tire chips used as supplementary fuel, which has a higher average price closer to $30 per ton. These figures support the national trend toward greater usage of TDF to reduce fuel costs, especially in cement kilns and pulp and paper mills.

Drain field aggregate and civil engineering, which combined for 32% of the markets this past year, continues to be a viable alternative product for tire processors.

The market for crumb rubber, although a small portion of the market segment, continues to grow.

2006 Forecast

Markets for products derived from scrap tires are expected to remain strong in 2006. The demand for TDF alone could outpace the supply, with the continued use of this material by pulp and paper mills and cement kilns. Markets for drainage aggregate also remain strong and will continue into 2006. Road construction projects facilitated by the Clemson Asphalt Recovery Technology Service (ARTS) Center, along with the growing sports turf and playground market should create a small demand for processed crumb rubber.

Future Trends

Market demand for processed scrap tires should remain stable in the near future. Pulp and paper mills have invested in systems to use TDF as supplemental fuel for its wood-fired boilers. The market for tire chips as drainage media has been well-accepted among contractors for the past five years and should continue to be a good market alternative. Steel mills using electric arc furnaces have successfully tested scrap tires as fuel and carbon source. Crumb rubber production and demand, although a small percentage should continue to grow.

Nationally, the Rubber Manufacturers Association has reported that 80% of scrap tires generated are recovered for recycling or energy use. This is an impressive milestone has been made possible by the support of tire manufacturers, consumer-paid recycling fees which are funding state and local government recovery infrastructure, and recycling business development resulting in the creation of stable and diversified markets. This trend should continue into the future.

RMDAC Action

The Council will continue to support existing scrap tire markets and encourage the use of crumb rubber in asphalt rubber paving and other added value applications for recycling scrap tires in South Carolina.

APPENDICES

APPENDIX A

South Carolina Recycling Market Development Advisory Council

APPOINTEES	REPRESENTING
A. Gerald Fishbeck United Resource Recovery	Recycling Industry Chairman, RMDAC
Clarence H. Hermann Michelin Tire Corporation	Tire Industry Vice-Chairman, RMDAC
Vic Carpenter Anderson County	County Government
Kay Clamp SC Petroleum Council	Petroleum Industry
Scott Courtney ALCOA	Aluminum Industry
Phil Ammons Wellman, Inc.	Plastics Industry
Roger LeDuc City of Aiken	Municipalities
Haskell Grant Milliken and Company	South Carolina Department of Commerce
Ronnie Grant Sonoco Products Company - Paper Division	Paper Industry
Donna London Strom Thurmond Institute Clemson University	Higher Education Research
James Zieche Allied Waste Systems	Solid Waste Collection and Disposal Industry
Steve Carreras Recycle American Alliance	Glass Industry
Chris Fisher Fisher Recycling	General Public
Art Levy Carolinas Recycling Group	Scrap Metal Industry

STAFF	
Ted Campbell Senior Manager	South Carolina Department of Commerce RMDAC
Karen Owens Manager	South Carolina Department of Commerce RMDAC
Noel Hill Administrative Assistant	South Carolina Department of Commerce RMDAC

Appendix B

South Carolina Beverage Container Recycling Assessment

Executive Summary

DHEC, the South Carolina Department of Health and Environmental Control, has a long history of supporting the state's recycling programs and Recycling Coordinators since its creation in 1991 by the South Carolina Solid Waste Management and Policy Act. In its diverse roles of providing grant funding, educational materials and technical assistance to local government recycling programs and tracking their recycling tonnages and rates, DHEC is concerned that recycling rates for beverage containers are not increasing. "Beverage containers" are defined as PET (#1) plastic bottles, HDPE (#2) plastic bottles and jugs, glass bottles, and aluminum cans.

To attempt to discern the reasons why these rates are flat and address specific issues related to beverage container recycling, DHEC contracted with the firm of RME Associates in Weaverville, NC to conduct a research project to determine the scope of the problem, involve stakeholders from local governments and businesses in discussions of the ramifications of the problem, and suggest solutions. This project grew out of DHEC's desire to explore beverage container product stewardship options, both voluntary and legislative, that could be implemented either as part of a national beverage container product stewardship initiative, or as a stand-alone South Carolina effort.

Project Goals and Objectives

The goal of this research and assessment project was to identify solutions to the problem of stagnating beverage container recycling rates in South Carolina that could gain acceptance and be implemented by a partnership of public and private sector stakeholders.

The associated objective was to identify the barriers and opportunities to increasing beverage container recycling in the state and develop recommendations for overcoming the barriers. Specific tactics used to gather this information included:

- Assessing the generation and recycling rates for commonly used beverage packaging materials in the state of South Carolina; specifically, PET bottles, glass bottles, aluminum cans, and HDPE bottles and jugs in all sizes including single-serve;

- Discovering the perceptions of both private sector companies and local recycling coordinators of the barriers and opportunities involved in increasing beverage containers recovery

- Soliciting specific suggestions from the stakeholders, both public and private, as to how the beverage container recycling situation can be improved and more containers recovered.

Findings

Generation Rates:

The consumption of PET bottles in 2003 for South Carolinians was 11.4 lbs/person/year, or 168 PET bottles per year per person, of which 136 were single-serve bottles.

Eighty-one percent of the PET beverage containers sold in South Carolina are single-serve sizes. Carbonated soft drinks and bottled water account for the vast majority (88 percent) of these single-serve bottles in South Carolina, but juices and isotonic beverages have some market share as well. Dairy and beer are very small in terms of consumption in PET.

S.C. HDPE generation in 2003 was 52,334,794 lbs. HDPE generation numbers and recycling rates were calculated differently from the other material types, since the available data does not separate beverage containers from all other types of HDPE bottles and jugs (detergents, etc). Thus, the HDPE numbers are combined and not indicative of beverage containers only.

Of the glass beverage bottles generated, 87 percent were single-serve and 13 percent multi-serve. South Carolinians each consume 71 glass bottles per year, of which 61 are single-serve. The beer market dominates single-serve glass bottles, accounting for almost 99 percent of these bottles. The only other uses are small amounts for carbonated soft drinks and juice/juice drinks. Multi-serve glass beverage bottles are only found for liquor and wine.

Aluminum cans, which are all single-serve size except for some imported, specialty and promotional cans, still dominate the market for soft drinks and beer. In fact, they are found only in these beverage categories. Cans account for almost 77 percent of the single-serve carbonated soft drink containers and 63 percent of beer containers. South Carolinians consume, on average, 318 aluminum cans per year.

Comparison with recycling rates

South Carolina material recovery numbers were obtained from DHEC's 2003 Annual Solid Waste Report. The recovery rate is highest for aluminum cans, at 72 percent. This represents 234 aluminum cans recycled by each South Carolinian each year. The rates for PET and glass were almost identical, at 13.9 percent and 13.5 percent, respectively. This means that each South Carolinian recycles only 25 PET bottles and 10 glass bottles per year. HDPE recycling was calculated at 19.3 percent. Again, the HDPE number is not directly comparable with the other numbers, as beverage container numbers are combined with all other HDPE numbers in all available generation and recycling reports.

Barriers to improving beverage container recycling in South Carolina

The survey interviews and visits with the recycling coordinators and businesses yielded a wealth of information about gaps in recycling services in South Carolina and possible ways to improve recycling of beverage containers. However, it should be understood that much of this information is based on conversations, observations, interpretations of anecdotes and opinions rather then the statistical interpretation of numbers and data. Any conclusions, therefore, may vary from reality to an extent that is undetermined. While such survey techniques can be used to gather useful information about potential recycling opportunities for planning and decision making purposes, they are not reliable as a source of precise, scientifically verifiable data upon which to draw specific conclusions regarding material quantities.

From the survey interviews conducted, including both the hard data gathered and the subjective answers provided to the open-ended questions, it can be concluded that the barriers to recycling more beverage containers in South Carolina occur in four areas:

- **Convenience**
- **Economic Incentives**
- **Education and promotion**
- **Infrastructure**

Recommendations

Recommendations regarding Convenience

- Expand curbside into more rural areas, make sure it's offered weekly, and add more materials.
- Investigate why curbside recycling participation is so low in communities where it is offered, and assess ways in which to achieve an increase.
- Promote recycling to businesses and help them with the logistics.
- Offer more recycling at away from home locations.

Recommendations regarding Economic Incentives

- Continue to promote Pay-as-you-Throw programs and track their efficacy
- Prioritize currently feasible economic incentives that could boost participation in existing programs.
- Investigate Advance Recycling Fees for beverage containers and evaluate their applicability to South Carolina.
- Encourage and/or remind recycling programs to value material revenue, and strive for best market prices
- Research and develop guidance documents on various economic incentives and how they might be structured

Recommendations regarding recycling education and promotion:

- Investigate the latest concepts and methods in recycling education and promotion, specifically the concept of Social Marketing, in which recycling is "branded" to different audiences with a reflection of their values.
- Use the recycling coordinators' ideas about new messages suggested in this study, and solicit more suggestions, to integrate the new social marketing research and techniques with messages that South Carolinians can relate to.
- Overhaul the language used in basic instructional brochures, and update any information that is rendered confusing by the use of industry lingo. Standardize language to actually ask for the materials that are desired.
- Encourage recycling businesses to become partners in developing and disseminating educational messages and tools.
- Promote the "All Plastic Bottles" program as an alternative to the confusing resin identification code in recycling educational materials.
- Increase outreach to the light and non recyclers identified in DHEC's study – low income residents, ethnic groups, younger people, new residents, and rural residents. Use new tools appropriate to each group.

Recommendations regarding Infrastructure:

- Assess the potential of regional infrastructure by examining existing regions for other South Carolina government services and determining if recycling would make sense along the same organizational lines.
- Investigate technologies that could improve the efficiency and cost-effectiveness of drop-off programs, including the Haul-All system and others.
- Initiate a dialog with recyclable materials processors and end-users in South Carolina to explore the idea of investment in regional recycling infrastructure.
- Encourage local governments to identify and evaluate all available options, both public and private, to increase the efficiency and effectiveness of their solid waste and recycling programs.

Conclusions

Vision

To implement these recommendations into an integrated system for beverage container recycling that incorporates some characteristics of product stewardship and is able to involve all stakeholders in needed improvements, DHEC will need to undergo a process of re-evaluating its vision for South Carolina solid waste management that will account for the changing realities of the recycling marketplace:

- Local government recycling systems that have reached the upper limit of the recycling rates they are able to achieve using current practices;
- The global nature of the recovered materials marketplace;
- The confusion on the part of the public in understanding that they should recycle but not how;
- Existing educational materials and messages reaching the limit in motivating the public to take action and participate;
- Declining recycling program funding and the need to design or re-configure programs for sustainability in the long-term;
- Recognition and promotion of the jobs creation and positive economic benefit of recycling in the state.

Drawing upon a new vision for recycling in South Carolina, DHEC would then develop a set of goals and from them a set of measurable, achievable outcomes that it would like to see from a revitalized recycling program that recognizes the new realities. Once the outcomes were defined, the state could move toward designing and implementing a "best practices" model for recycling at the local level. A best practices model would help not only beverage container recycling, but all recycling programs, of which beverage containers are only one part.

Best Practices

A best practices model recognizes that a recycling rate is only part of the story of a program's success or potential for success. Alternative measures would be developed as part of such a program, since the traditional rate measures are not able to measure the new outcomes. A best practices model would require the state to define "best" or at least "optimal" in many areas where they have traditionally left these decisions to the local governments. It would require some sort of scoring system, where specific pieces of the comprehensive system could be measured on a meaningful scale. Local governments that traditionally have reported their tonnage numbers and some empirical data, without expecting any judgment to be applied to these numbers, would experience a period of adjustment to a new process in which some form of "credits" or points were awarded for good performance in the defined areas. For example, the following program characteristics, as well as others, could be recognized and weighted in awarding preference for grant funding:

- Involving recycling businesses in education and promotion;
- Evaluating the possibility of private sector service provision in a systematic way,
- Using PAYT,
- Engaging in regional cooperation,
- Operating their solid waste system as an enterprise fund.

Obviously, this is not a complete list of the factors that might be considered. Development of a best practices model of designing, implementing, and measuring the effects of, a recycling and waste reduction system with multiple components, would require input from the affected stakeholders. If it sought to incorporate elements of product stewardship, it would have to include all private sector stakeholders, both product producers and waste generators, as they will be expected to contribute resources to meet the desired outcomes.

A best practices approach could integrate with product stewardship. A product stewardship model of managing discarded beverage containers for recycling would require DHEC to become the manager of various stakeholders as they assume their roles in such a system. Product stewardship requires manufacturers to share in the financial and physical responsibility for collecting and recycling products at the end of their useful lives. Those that use products will do their part by assuming greater responsibility for managing their discards. These generators will increasingly be expected to make wise purchasing and waste management decisions and to pay the true cost of managing waste, including the costs associated with the impact of their waste generation and disposal practices. The role of the state will be to foster and encourage such responsibility at the individual, corporate, and government levels.

Appendix C

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For Immediate Release:
September 22, 2005

Recycling businesses recognized for their efforts

Greenville, SC – The SC Recycling Market Development Advisory Council recognized 10 businesses and organizations today for their efforts to support recycling in the state. The winners were honored at a luncheon held at the Michelin Conference Center as part of the second annual Recycling Business Forum.

Housed within the SC Department of Commerce, the Council tracks the recycling industry for the state as well as promotes the benefits of recycling through the Business Recycling Assistance Program (B-RAP). B-RAP is a partnership with the SC Department of Health and Environmental Control that provides free technical assistance to business, industry, government agencies and other interested organizations.

"Choosing this year's winners was no easy task as we had a good number of deserving nominees," said Ted Campbell, senior manager of the Council. "But the winners we recognized today took some extra steps to help foster our recycling industry and we're certainly appreciative of the example they set for their peers."

The awards were broken into two categories: four recognizing recycling businesses and four recognizing organizations that implemented successful recycling initiatives as part of their operations. There were two special recognition awards also presented. A summary of the award recipients is provided below:

SC Recycling Business Awards:

Chris Fisher, owner of the Charleston-based **Fisher Recycling**, was recognized as the **Recycler of the Year** in recognition of his growing business and recent expansion at the old Naval Base in North Charleston as part of the Noisette redevelopment of the area.

Nucor Steel in Berkeley County was recognized under the state's **Best Large Company category**. Nucor produced more than 3.3 million tons of carbon steel sheet and beams in 2004 at its Huger facility, recycling 12 percent more scrap such as old automobiles, railcar wheels and appliances than it had the previous year.

Mid-Carolina Steel & Recycling Company in Columbia received honors as the state's **Best Medium-sized Recycling Company**. Mid-Carolina not only operates a ferrous and non-ferrous scrap metal recycling processor but has added a new steel service center that includes an ornamental iron warehouse and showroom.

Earth Protection Services Inc. in Williamston won recognition in the state's **Small Recycling Business category**. EPSI serves as a regional collection and processing center for a variety of materials regulated as universal waste, including computer electronics, mercury-containing fluorescent lamps, industrial and consumer batteries as well as PCB and non-PCB lighting ballast.

--MORE--

Business Recycling Assistance Program Awards

Greenville County was recognized as having the **Best Office Recycling Program** in the state. Using a fun slogan, "Play Paperball," and creative educational pieces, Greenville County employees increased the amount of office paper they were recycling as well as added beverage containers, fluorescent bulbs and printer cartridges to their recycling efforts.

S&T Grading and Excavation in Lexington was recognized as the top **Construction and Demolition Recycling Program** in the state. S&T recycled 95 percent of the land-clearing debris, concrete, asphalt and brick debris generated in construction and demolition projects to create mulch, boiler fuel and aggregate products that are sold to various commercial and industrial customers.

Chicago Pneumatic Tool Company in Rock Hill was honored as the state's **Best Small Industry Recycling Program**. After tackling high volume items like cardboard and office paper, Chicago Pneumatic aggressively targeted a number of additional items, including used oil, fluorescent bulbs, scrap metal, printer cartridges and skids. They have also implemented a program to use reusable packaging and containers to reduce packaging waste.

Alcoa Mt. Holly was awarded **Best Large Industry Recycling Program** in honor of the company's efforts to recycle 72 percent of its total waste in 2004. Alcoa has long been a recycling leader in SC, recovering a wide array of materials in its waste reduction and recycling efforts. Employees may bring recyclables from home to recycle, and they participate in a number of community outreach programs to foster support for environmental stewardship.

Collins Home & Family Ministries of Seneca was given special recognition for its efforts to recycle newspaper and office paper in the Upstate. As a non-profit children's home, the recycling program began in 1986 as a way to raise money for the support of the children living at Collins Home. Collecting newspapers from individuals, civic groups, neighborhood associations and businesses throughout a three county area, this program generates about $25,000 in revenue for the Collins Home each year and provides a positive stewardship message not only to the residents of the Collins Home but also the customers they serve.

Clarence H. "Red" Hermann of Michelin Tire Corporation was recognized for his outstanding service to the SC Recycling Market Development Advisory Council. Red joined the Council in 1997, representing the tire industry. He has chaired the Council's Tire Committee and most recently the Established Recyclables Committee as well as served as Vice Chair of the Council. He also has served on the state's Waste Tire Committee and has been a strong supporter of efforts to use recycled tires in rubberized asphalt.

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Appendix D

South Carolina Recycling Company Profiles

South Carolina is fortunate to have some 300 businesses engaged in the recovery, processing, manufacturing and sale of recycled materials. The following profiles show the diversity and complexity in which many of these businesses operate.

Diversified Recycling, Rock Hill, SC

Diversified Recycling moved its operation from Greensboro, NC, to Rock Hill in 2002. As a recycler of used oil, antifreeze, solvents and other chemicals, Diversified services a number of clients and business types – from automotive repair shops and dealerships to businesses with fleets of cars and trucks. And growing to meet his customers' needs has played a critical role in the company's success.

According to Don Burnette, the owner of Diversified Recycling, oil filters were a growing problem for many of his clients. They have to be drained to collect residual oil, and the process was considered messy by most accounts. He developed a crusher that not only drains the residual oil but also converts the filters into tight briquettes that can be used by the steel industry. Steel companies with electric arc furnaces are able to recover the steel in the filter, keeping thousands of oil filters out of the state's landfills.

The company also recycles other automotive waste streams, such tires, lead acid batteries and absorbents, and provides parts washer services, too. Burnette has even added fluorescent lamps and computer recycling to his company's menu of recycling services.

Diversified has experienced significant growth in the past three years – going from a one-person business to a firm that now employs nine people and has a fleet of seven trucks to handle customers' accounts throughout the Southeast. The company is a licensed hazardous waste transporter and handles plant decommissioning as well as emergency spill response and clean up.

Earth Protection Services Inc. - Williamston, SC

Earth Protection Services Inc. serves as a regional collection and processing center for a variety of material regulated as Universal Waste, including computer electronics, mercury-containing fluorescent lamps, industrial and consumer batteries as well as PCB and non-PCB lighting ballast.

EPSI opened it Williamston facility in 2002, and has grown its operations to provide 21 jobs in this small community and generate an annual payroll in excess of $750,000. The company has played a significant role in diverting potentially hazardous materials from the state's landfills. In 2004, EPSI recycled 13 million mercury-containing fluorescent lamps, 800,000 pounds of lamp ballast, 204,000 pounds of scrap electronics and nearly 20,000 pounds of batteries.

For its lamp recycling operations, EPSI transports fluorescent bulbs stored in cardboard boxes to the Willamston facility. There the intact bulbs are loaded onto a feed table that takes them into the bulb recycling unit where they are funneled into a crusher for sizing. Then they go through a screen to separate the glass from the aluminum end caps. Broken lamps are carefully hand fed into the recycling unit for crushing.

The HID lamps are handled at a specialized workstation where there is a constant vacuum. The outer glass is broken away from the ampoule. The ampoules are transferred to a retort system at EPSI's Glendale, Arizona facility. This system separates and captures the mercury.

Throughout the process, the filter/absorber vacuum separates and collects the phosphor powder in a drum. The phosphor powder contains mercury and is shipped to Glendale where it is heated to liberate the mercury vapor to a liquid. The vapor is then removed by a vacuum through a condenser, cooling and condensing the mercury vapor into a liquid. Then the mercury was sold in the marketplace.

Finally, the aluminum end caps are collected and sent to a scrap metal recycler, and the glass is sold to a cullet broker for use in a variety of products.

Fisher Recycling, Charleston, SC

Charleston entrepreneur Chris Fisher started his recycling business in 1992, with one truck. He collected paper, cardboard, plastic, glass and metal containers from businesses and restaurants in Charleston's peninsula business district, providing business owners with a valuable service that they needed – dependable and timely recycling. Fisher provided the clients with waste audits, containers for their materials and even educated the employees on how to recycle properly. By 1994, the collections had grown from just a few daily pickups to more than 30 a day.

As his business grew, so did his collection and processing infrastructure. Fisher retired his personal blue pick up truck and added larger trucks to haul the tons of materials he was collecting. In 1997, he opened a warehouse in North Charleston to separate materials and prepare them for markets. And he added onsite paper shredding services in 1998, to service the growing number of banks, law firms, medical facilities and other businesses that required secure document destruction.

Always looking for new challenges and markets, Fisher Recycling provides curbside collection to residents of Daniel Island and has added electronics recycling and reuse to its menu of services. The company is also working with a local organic grocery store to use its food waste and mix it with yard debris to start a vermi-composting operation.

Plans are also in the works to make terrazzo tiles and countertops from recycled glass, and created wood flooring from recycled pallets. He recently opened a second location in North Charleston as part of a partnership with the Noisette Company to provide recycling services and create new jobs as part of ongoing efforts to redevelop the former Naval Base. In addition to collecting recyclables throughout the redeveloped commercial and residential areas, Fisher will have an education center designed to teach residents and visitors about the benefits of sustainable practices.

This small family-owned business continues to pursue its goal of protecting the environment and at the same time provide a valuable service to its growing list of customers. For more information on Fisher Recycling, visit http://www.fisherrecycling.com.

Global Investment Recovery, Inc., North, SC

Located in North, SC, Global Investment Recovery Inc. helps businesses, government agencies, schools and colleges throughout the state properly manage their obsolete electronic equipment. In fact, Global was awarded the state procurement contract for electronics recycling service in August 2004 and has collected more than 637 pounds of scrap electronics in the first year.

They collect a myriad of scrap electronic equipment, including televisions, computer monitors, central processing units (CPUs), printers, fax machines, keyboards, laptops, modems, power supplies, printed circuit boards and cell phones.

Customers notify Global of their request for recycling services via the Internet and upon receipt of the order, Global sends a truck to collect the materials for recycling. Each load is weighed onsite as well as back at the North facility to ensure accuracy and confirm contents. If the loads need to be separated and reorganized by material, employees sort materials by category and repackage for shipping, either directly to end markets or to Tampa, FL, where further processing can take place.

In addition, equipment that has potential for reuse is separated out and also sent to Tampa for testing and evaluation. Most of the processing that takes place in SC related to plastics and TV and CRT monitors.

Global is ISO 14001 certified and operates recycling facilities In Reno, NV as well as the Tampa and North plants. The SC plant has five full-time employees and is managed by Steve Strickland, a longtime electronics recycling professional.

According to Strickland, they are able to recover 96 percent of the materials that come through his facility. There are strong markets available for the CRT glass, metals, plastics and circuit boards, and he recycles the pallets, paper and cardboard boxes that also come into the plant.

For clients concerned with data destruction, Global uses state of the art technologies to erase proprietary data contained on hard drives and its shredding and separation technology systems enable the company to handle a high volume of materials in an efficient and safe manner.

To learn more about Global Investment Recovery, Inc., visit the company web site at www.girpm.com or call Steve Strickland at 1-800-933-0319.

Nucor Steel

Nucor Steel, the largest recycler in North America, has multiple operations in South Carolina. Nucor operates Electric Arc Furnace shops in Darlington and Huger. These facilities take scrap metal and melt it into structural steel shapes, beams and sheet metal that are used to make a wide variety of end products.

Nucor also uses these recycled steel products to fabricate steel joists, girders and decking for buildings at their operations in Florence and Swansea. In addition, recycled steel is used to manufacture shafts, keystock and other types of cold finished steel at the Darlington facility. With more than 1,700 employees located throughout the state at its manufacturing facilities, Nucor is a significant employer in South Carolina.

According to Steve Rowlan, general manager for environmental affairs at Nucor, the company is one of the greatest recycling stories in North America. “We annually convert more than 17 million tons of scrap steel into useful products that are found in everything from appliances to shopping centers,” Rowlan explained. “In South Carolina, Nucor is recycling scrap metal at the rate of 180 pounds per second every second of every day.”

As a result, Nucor converts scrap material into a useful product that is then sold into virtually every type of steel market that exists. Nucor’s efforts also save tremendous amounts of natural resources from further depletion.

In addition to conserving natural resources, Nucor has used its internal recycling program to help others in the Darlington community. Working with the local Special Needs and Disability Board, the company’s cardboard, plastic and paper are sent to a processing facility that Nucor built where special needs clients separate and bale materials for markets, and the proceeds from the sales of these materials benefit the board and its programs.

Nucor has received numerous awards in recognition of its commitment to recycling and community, including the Best Industry Recycling Award from the Business Recycling Assistance Program in 2002 and the Best Large Recycling Company honors in 2005.

To learn more about Nucor and its operations, visit http://www.nucor.com.

Paper Stock Dealers, Columbia, SC

Paper Stock Dealers, a subsidiary of Sonoco Products, handles most of the recyclables generated by Midlands residents and businesses. In fact, the plant services 12 counties in the middle of the state, processing many thousands of tons of materials annually.

According to Jane Hiller, Paper Stock recycling educator, the Columbia facility expanded its services from handling primarily newspaper and cardboard at a small building off of Green Street when the company was approached by Richland County and City of Columbia officials after federal legislation was passed requiring safer, more expensive landfills in the early 1990s.

Paper Stock had traditionally just collected paper materials for its Sonoco parent company but agreed to build a Material Recovery Facility (MRF) to handle a variety of recyclable materials collected from residential collection programs, including plastic bottles, glass containers, metal food and drink cans, newspapers, magazines and cardboard. The facility also processes cardboard and many grades of paper and plastic generated by area businesses.

One of the unique things about Columbia's MRF is an education center located adjacent to its processing center. Students, business teams and community groups can watch the workings of the MRF through large windows in a classroom atmosphere. In addition, video cameras project live images from the processing facility on a large classroom screen.

And just as interesting as the action on the floor are the many samples of recovered materials, sample products and creative projects that Hiller and local students have made to demonstrate the importance of recycling –a flag made from plastic bottle caps, a rug crocheted from plastic grocery bags and a hundred pound chair made entirely from cardboard and Elmer's glue.

Paper Stock has recently expanded its operations and facility with the addition of a new state-of-the-art baler, v-screen for sorting newspaper, a new shredding room for document destruction and the addition of a new machine shop to service its fleet of collections trucks onsite, creating more than $850,000 in investment.

The company employs 41 full-time workers as well as 20 temporary employees including some from the local Babcock Center to help special needs citizens lead productive lives. "They are dedicated workers that really enjoy being part of our business," Hiller explained.

"Recycling continues to grow as more people and businesses realize the benefits of reducing their waste disposal costs through diversion programs," Hiller added.

S&T Grading and Excavation, Lexington, SC

According to Mike Sturkie, president of S&T Grading, recycling construction and demolition (C&D) materials is gaining greater acceptance as land availability dwindles and population figures continue to grow. In Lexington, population numbers have increased by more than 40,000 people in the last decade, and the growing number of new homes and businesses has created plenty of C&D materials to be managed.

S&T realized the value in converting materials like concrete, asphalt, bricks and land-clearing debris into new products that are sold to customers instead of simply burying these items in a C&D landfill. His goal was to achieve closed-loop recycling, and he's been successful in doing just that.

In 2004, Sturkie diverted 95 percent of the concrete, asphalt and bricks that came into his facility, crushing 42,000 tons of material to generate various sizes of aggregate rock that was in turn sold to construction customers.

S&T also recycled nearly 15,000 tons of land-clearing debris that came into its facility. Using large grinders and various screens, the debris is converted into high quality topsoil and landscape mulch that is sold to commercial landscaping operations. Some wood is converted into boiler fuel and sold to a regional manufacturing plant.

By processing these materials for reuse, S&T is achieving recycling rates of 95 percent on construction debris and 96 percent for the land-clearing material. The company hopes to expand its business to accept additional materials as development continues to grow in the Lexington County area.

Wellman, Johnsonville, SC

The world's largest producer of polyester fiber from recycled bottles has a plant in Johnsonville, SC that employs 650 people and creates a significant impact on the Pee Dee's economy.

Wellman first started recycling plastic fiber waste in the early 1960s and went on to pioneer bottle recycling in the 1970s. The company helped lead a revolution in the consumer packaging industry in the early 1990s, being the first company to develop a closed-loop recycling chain for PET and polyester packaging. Wellman annually buys more than 160 million pounds of recycled containers and industrial PET waste that is processed into staple fiber and sold to the apparel and home fashions industries for use in products consumers use every day, such as backpacks, blankets, sportswear and carpeting.

"Recycling provides an important feedstock for our company as well as many others located throughout our state," said Phil Ammons, director of raw materials for Wellman's Recycled Product Group and the plastic industry representative of the SC Recycling Market Development Advisory Council. "Although more and more plastic bottles are being generated annually, we are seeing less of them make their way to recycling containers and that's a real concern for our business."

The emergence of single-serve containers as well as the proliferation of new beverage choices for consumers--such as bottled waters, specialty teas and a growing number of sports drinks--create a seemingly plentiful supply of PET. But the reality is that PET recycling rates in the United States have dropped from 40 percent in 1995 to about 20 percent, or 800 million pounds, in 2002. Of that 20 percent, nearly 280 million pounds, or 35 percent, of PET are going abroad to Asia for processing.

"We want people to realize that we have the capacity in South Carolina to process a lot more bottles than are being collected currently," Ammons added.

At its Johnsonville plant, Wellman also produces engineered resins from post-industrial and post-consumer materials that are used in a number of applications, such as automotive parts, lawn and garden products, consumer products and electrical markets.

To learn more about Wellman and its operations, visit the web site at http://www.wellmaninc.com.

RECYCLING means BIG BUSINESS!

South Carolina's Recycling Industry plays a vital role – employing 20,000 with a $1.4 billion economic impact – in our state.

HELP US CONTINUE TO GROW BY DOING YOUR PART.

Recycle your aluminum and steel cans, plastic bottles, glass containers, office paper, newspapers, magazines, cardboard, used motor oil, oil filters and oil bottles, fluorescent bulbs, tires, yard waste, batteries, white goods and electronic devices.

WE NEED THESE MATERIALS TO MAKE PRODUCTS YOU USE EVERY DAY.

Contact your local solid waste department for more information about recycling programs in your community. And for more information on recycling, visit **www.scdhec.gov/recycle**.

This is a message from the **S.C. Recycling Market Development Advisory Council** and the following recycling companies and organizations:

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