RECYCLING INDUSTRY CLUSTER STRATEGIC PLAN 2010

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Acknowledgements

This Recycling Industry Strategic Plan is a cooperative endeavor based on the participation of a number of individuals, companies and agencies including the SC Department of Health and Environmental Control. Rather than inadvertently omitting names, the Recycling Industry Group, the Recycling Marketing Development Committee, and New Carolina extend our sincere gratitude to all of the participants who provided valuable time, effort, information and insights to this planning effort.

In addition to the strategic plan committee that included representatives from each of the groups mentioned above, special thanks is due to the plan sponsors who provided financial support to this effort.

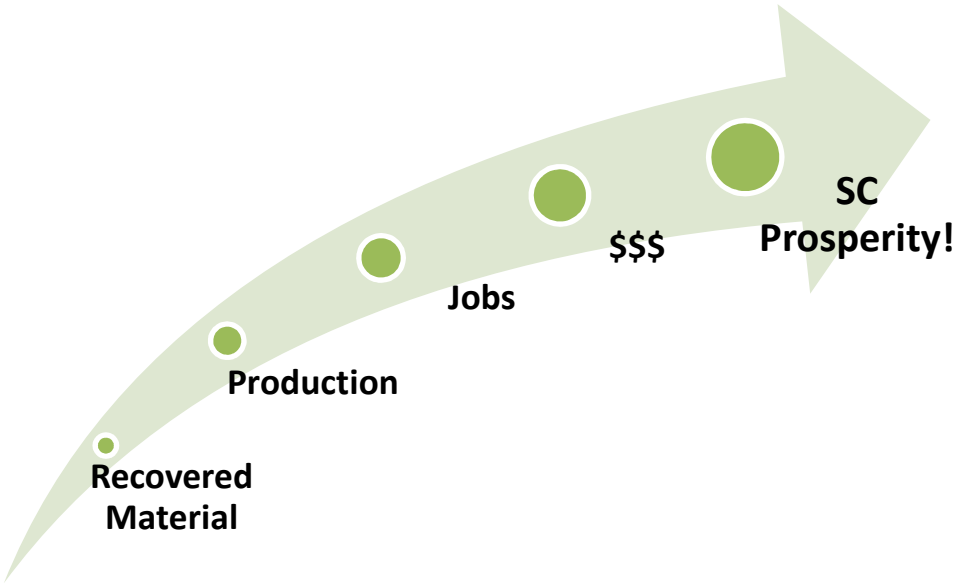
Executive Summary

The management of waste has been a challenge since the beginning of time. Ancient civilization wrestled with the sanitary aspects of waste disposal. Thousands of years later, recall the New York garbage barge that travelled for six months in 1987 along the eastern seaboard looking for a place to unload its 3,168 tons of trash. The discussions continue today in terms of landfill locations, costs of disposal and reducing the carbon footprint. Recycling offers alternatives to waste disposal that result in avoided disposal costs for industry and government as well as revenues from the sale of recyclable materials. It also provides other significant benefits including material for new products made from recycled content. Increased demands, scarcity and the cost and environmental impact of extracting and producing raw and virgin materials presents manufacturers and the recycling industry with high level opportunity. The challenge is recovering material before it reaches the landfill.

While South Carolina's municipal solid waste recycling goal is 35%, the actual 22% residential recycling rate is below the national average rate of 33.2%. Still, the recycling industry has a 6.5 billion dollar impact on South Carolina's economy with 15,600 identifiable jobs and an impact on 37,440 jobs. While technological innovation is increasing the recycling capabilities and applications well beyond imagination, there is a wealth of material being lost to landfills rather than going back into production. Today we find recyclers across the state, in rural and urban areas, and in many different capacities. From a simple one person/one truck operation to high tech, multi-million dollar equipment investments with global clientele, each operation contributes to South Carolina's recycling economy.

Still, there is a disconnect in terms of the opportunities to capture the advantages of recycling from an environmental and a business perspective in comparison to the actual implementation of procedures to make a difference. The industry is dependent on voluntary recycling decisions from commercial and residential sources. Without the backing of incentives, law or both, there are abundant untapped assets leaving supply and business activity unpredictable and at greater risk.

In 2007, with a mission to strengthen the state's recycling industry by establishing policy, building networks, promoting market development and leveraging existing infrastructure**,** the recycling industry joined its varied forces and began operating as a cluster. Since its first meeting, it has stayed true to its mission by dividing into operating teams that tackle educational programs, marketing efforts, developing relationships with policymakers and universities and even getting approval for recycling's own license tag. Volunteer recycling stakeholders with the assistance of the Recycling Market Development Advisory Council (RMDAC), South Carolina Department of Commerce, and New Carolina, have initiated numerous activities that promote the cluster. To guide their efforts in a more concerted way, the recycling industry embarked on a Strategic Plan in 2010.



The basis of the *Recycling Industry Cluster Strategic Plan* rests on stakeholder analysis of the issues and opportunities facing South Carolina's recycling industry. In early 2010, a roundtable of influential CEOs from the recycling and solid waste industries met to develop solutions and lay the groundwork for enhancing the industry opportunities ahead. By combining the input of the recycling industry stakeholders, the examination of industry trends, applicable law and individual case studies, along with proposed recommendations, the plan is intended to serve as a guide for how and what the cluster should most appropriately and effectively focus on in the future.

To realize the recycling cluster's vision for South Carolina to be a national leader in the recycling industry in terms of job creation, investment and providing access to sustainable markets for recyclable materials, goals were developed. The following goals and implementation strategies were identified by the recycling cluster in previous meetings and fine tuned based on CEO input.

Goal 1: Communications

South Carolina's recycling economy will be prominent and respected in the quest for state prosperity.

To appeal across audiences, targeted, professional communications will be developed that integrate the cluster's philosophy and the connections between personal responsibility, transparency on the costs of solid waste disposal, economic prosperity, policy decisions and education about the workforce and business potential. Industry officials recognize the need to use free media where practical but also underscore the need for a progressive, resonating marketing campaign that appeals to the demographic categories that are recycling the least. A recent successful marketing initiative, Georgia's *You Gotta Be Kidding Campaign!* is a tongue in cheek campaign targeted to the 25-34 year old population and the places they visit including concerts, bars, Facebook and other congregating sites. The cluster recognizes the importance of building working

relationships with policymakers. Collaboration is the mantra among this cluster, but so is advocacy as an on-going communication tool.

Goal 2: Networks and Collaboration

South Carolina will have a comprehensive recycling industry network that provides compelling rationale for widespread industry connections and collaboration.

The industry is built on loosely arranged as well as more formal structures. The stakeholders identified potential and even some unexpected partners during the CEO roundtable. From business and economic development alliances, to environmental groups, education entities and to policymakers at all levels and perspectives, collaboration is a top priority. It is important that trust and respect among partners is cultivated early on and that the early stages of proposal and plan development are inclusive. When controversial policy issues surface, these established relationships will be critical.

Goal 3: Leverage Infrastructure

South Carolina's recycling industry will leverage its assets to increase value and strength and overall competitive advantage to its individual business components and the industry as whole.

In addition to hard infrastructure such as roads, buildings and equipment, there also is collaborative potential in administration, marketing, procurement, education, policy advocacy and research. In South Carolina, recycling businesses vary in size and location, and activities frequently cross state and even national boundaries. These businesses have broad ranges of function (from marketing to manufacturing), application and commodities. A thorough assessment of the current and potential value chain would allow prospective or growing businesses to consider where there are unmet needs and where there are opportunities to refine processes, improve quality and add efficiencies. The industry will initiate

discussions with South Carolina's transportation and logistics cluster in order to explore the potential for regional recycling distribution and processing centers as well as hub and spoke applications for a consortium of recycling businesses. By pooling resources that support the industry as a whole, the entire industry will prosper.

Goal 4: Business Development and Recruitment

Build a critical mass of sustainable recycling related businesses in South Carolina.

Additional recovered material is needed to enhance the capabilities of existing business and to recruit and grow new business. Currently, residential recycling in the southeast is the lowest in the nation and offers tremendous potential to South Carolina industry in terms of increasing feedstock. In addition, if manufacturing waste streams transitioned to recycling, they, too, offer significant opportunity for material growth. Industry leaders noted the importance of targeted recruitment of industrial operations that either generate recyclable material or that need recyclable material as feedstock.

Businesses need accurate and consistent information when considering whether to locate or expand in South Carolina. Data should include material composition, amounts and location, workers needed or available, operational resources and where the gaps exist in these areas. A more consistent data collection system is in the works for local governments. At this point, business reporting is voluntary and inconsistent and stakeholders generally agree that while more robust business reporting would be advantageous to recycling business development, they prefer an incentivized rather than mandated business reporting system.

Other recommended business development strategies include populating the initial value chain draft outlined in the plan with up to date resources in order to reveal the states' areas of competitive advantage in the recycling arena. Also, while not specifically targeted to the recycling industry, South Carolina offers some attractive incentives to business. Because of recycling's macro-level impacts, industry officials intend to study and pursue incentives that specifically support recycling business development and recruitment.

Goal 5: Research and Education

South Carolina will be on the cutting edge in recycling knowledge and technology and economic enterprise.

Education and research have a major influence on the future growth of South Carolina's economy particularly as they relate to the state's ability to develop and apply new technologies. The industry recognizes and supports investments in research, education and equipment that will stimulate positive change and invigorate new and better processes, material and equipment innovations. Invention, however, comes with a certain degree of uncertainty and cost.

Stakeholders note that there is not a structure for collaborative research that specifically supports recycling's industry wide needs even through the results often apply to the entire industry. An industry sponsored, university based advisory group was suggested as a means to identify and coordinate an approach for potential research grants for technical and demonstration needs. The Asphalt Rubber Technology Service (ARTS) partnership among Commerce, SC DHEC and Clemson University has been successful as a research and funding model that could apply to other recovered commodities.

Goal 6: Policy

The Recycling Industry Group will facilitate strategic policy decisions that foster a sustainable and prosperous recycling economy.

Policies that lay the foundation for a strong, fair and sustainable business environment will go a long way towards increasing recycling rates and business growth. From accounting transparencies, select mandates on marketable commodities, producer responsibility laws similar to the e-waste bill passed in the 2010 South Carolina legislative session, to a modest state imposed tipping fee that covers costs for research and local government grants, state policies can play a dramatic role in the strength of the recycling industry. In a number of states across the country, these types of policies have made significant positive local and statewide impacts when coupled with locally administered incentives such as Pay As You Throw (PAYT), iRecycle and Win! or senior citizen recycler rebate programs.

Due to climate change, energy issues, technological advancement and product stewardship initiatives, South Carolina DHEC is recommending an update to South Carolina's Solid Waste Management Plan and Act. Currently, the state recycling goal is 35%, which has not been met since the Act was amended in 2000. Industry officials recommend that stronger policies will help the state meet or exceed the 35% goal and substantially increase the waste diversion rate. The industry will advocate for and support these update efforts, particularly when they relate to business activity. In addition, the industry is generally supportive of wise state policy that recognizes that there are investments and costs that are justified and needed if we are to recruit and grow business in South Carolina. Comprehensive tax reform, infrastructure maintenance and education funding are potential tactics to enhance the general business climate in South Carolina.

Goal 7: Organizational Development

The recycling cluster will have an organizational structure that includes procedures and processes that represent and optimize the value of the recycling industry and its component businesses.

The recycling cluster has been ably administered with the help of the Department of Commerce's staff and the Recycling Market Development Advisory Council, New Carolina and South Carolina DHEC. Industry stakeholders have contributed numerous volunteer hours. As outlined, this plan is ambitious and because of the increased activity that will be necessary to fulfill the vision, a more formal administrative and organizational structure has been suggested that transitions from a government administered to an industry administered organization. In addition to developing a long term structure, membership recruitment, funding development, advocacy and plan implementation based on strategic plan priorities round out the organizational responsibilities. A public/private funding mechanism for support of the cluster that potentially includes membership fees, sponsorships, support from a state imposed tipping fee, and grants are aspects that need to be explored. Once the strategies are prioritized, the cluster's committee structure may need to be realigned.

Conclusion:

To date, the recycling industry cluster has been successful in its efforts. Why, then, is there an urgent need to implement this strategic plan? The industry is at a crossroads where individual businesses can operate without industry-wide structural cohesion or it can collaborate on areas of competitive advantage and accelerate its position as a national recycling leader.

Attaining the stated goals requires careful planning and the appropriate allocation of recycling cluster resources. Recycling stakeholder commitment will be crucial for the cluster to gain prominence and buy-in from potential partners.

Each goal identified in this plan is individually important. Collectively, the goals, and the steps devised for their implementation, provide an approachable way for the recycling cluster to enhance the recycling landscape and the recycling economy across South Carolina.

The full *South Carolina Recycling Industry Cluster Strategic Plan* provides more detail on the goals, tactics and resources needed to achieve them. That information is summarized in table form beginning on Page 125 of the report. There is also an in-depth look at the industry, the South Carolina components and some model case studies.

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I. Purpose

South Carolina's future in the recycling economy is compelling given its potential sustainable supply chain, its contributions to the economy and the emerging mainstream support for sustainable business and jobs. Already, the state is shaped by recycling businesses which provide a 6.5 billion dollar economic impact to the state and approximately 38,000 identifiable jobs. Still, the industry is at a juncture where it can continue as it has in previous years or it can proceed with coordinated and concerted effort to pursue and realize untapped markets and business growth. In response to changing market conditions and increased opportunity, industry stakeholders are undertaking this strategic plan in order to guide the recycling industry cluster's efforts to encourage investment, stimulate job and business growth and to inform policy choices.

Consider first, that many South Carolina manufacturers are on the search for recovered material feedstock and in many cases, the recycling industry cannot provide adequate supply to meet their needs. Recyclers insist that supply exists but by allowing recoverable material to be landfilled, rather than returned to the material supply stream, important business opportunities and dollars are lost daily. Industry leaders are committed to changing this dynamic.

Size matters in the industry so escalating demand and increased scarcity for raw materials can be beneficial if recovered material is actually captured before it reaches the landfill. Across the state, the success of the industry is highly dependent on the voluntary recycling decisions made in the home and in the business community. Voluntary systems, without the backing of strong policy or incentives, coupled with volatile markets, can cut into supply unless there are measures in place to sustain business activity based primarily on known or anticipated commodity stocks.

From the citizen perspective, a basic level of service is expected from their government. With recent changes in South Carolina's tax structure coupled with a depressed economy, local governments are stretched thin and challenged to support services like waste management and recycling. For these reasons, services and utilities should be assessed in a different light so that waste programs are financially sustainable and effective. While fees and income from recovered material sales provide support for services, communities across the

country also are recognizing significant offsets from avoided landfill disposal costs.

The strength, initiative and finances of the private sector drive the state's recycling economy but there are other integral components needed to ensure the industry's success. Public and private resources in the way of grants, research, infrastructure improvements and education are needed to address material supply shortages. The industry also depends on state and federal government to ensure a level playing field in terms of policy and investment. Certainly, the industry's economic impact is noteworthy and a building block for increased activity particularly when the economic, social and environmental benefits of the industry exceed costs and when the long term outlook supports more South Carolina living wage jobs.

Fortunately, South Carolina already has regulatory, educational and development functions within its agencies and statewide committees that address many of the recycling needs and provide impetus for the cluster's development. In addition, since the cluster's inception, over 100 recycling stakeholders have initiated activities that promote and solidify the cluster. Taken to the next step, cluster participants now are embracing this strategic plan in hopes of providing a long-term foundation for a robust but efficient, profitable and sustainable recovered materials economy in South Carolina. This strategic plan presents the challenges and opportunities facing the industry cluster and outlines measures that the industry should address so that it will have more control and choice in its preferred future.

II. Stakeholders

Along with over 300 individuals, industries and associations, there are a number of instrumental partner organizations that have joined forces to develop this strategic plan. RMDAC, New Carolina and the recycling cluster are undertaking this strategic planning process to provide the basis for practices and policy that will advance the industry as a national leader.

Recycling Market Development Advisory Council (RMDAC) -

The 14 member RMDAC, housed within the South Carolina Department of Commerce, was created under the Solid Waste Policy and Management Act of 1991. With the assistance of the South Carolina Department of Commerce's Business Services Department, RMDAC tracks the state's recycling industry, assists in the development of recovered material markets and makes policy and program recommendations to the Governor and General Assembly.

http://sccommerce.com/business-services/recycling-market-development

New Carolina – South Carolina's Council on Competitiveness –

New Carolina is a public private partnership formed in 2003 to increase the per capita income and competitiveness in South Carolina. New Carolina works with industry sectors to facilitate clusters as developed by Michael Porter and The Monitor Group. The cluster strategy promotes the attributes of its individual member organizations while benefiting the entire industry by leveraging common functions.

http://www.newcarolina.org/

Recycling Industry Group (RIG) –

In 2007, the recycling cluster, also known as the RIG, was formed to strengthen South Carolina's recycling industry by establishing policy, building networks, promoting market development and leveraging existing infrastructure. The cluster brings together recycling businesses and industry that use recycled

materials in their manufacturing process. New Carolina and the Business Service Division of the South Carolina Department of Commerce steer the cluster and the anchor company is Sonoco Products, a global packaging company.

http://www.newcarolina.org/index.php?option=com_content&task=view&id=138&Itemid=308

III. Plan Direction

Cluster Beginnings

The Recycling Market Development Advisory Council (RMDAC) was created by the Solid Waste Policy and Management Act of 1991. Since first convening in 1992, RMDAC's principal goal has been a consistent, cost competitive and quality supply of recycled materials for existing and potential recycling businesses. The 14 member governor appointed council tracks the success and growth of the state's recycling industry and makes recommendations to the Governor and General Assembly. RMDAC is supported by the South Carolina Department of Commerce's (SC DOC) Business Services staff. They coordinate RMDAC's activities including the annual business forum and provide technical and economic development assistance to recycling businesses. Funding for RMDAC's staff assistance is subsidized by the Solid Waste Management Trust Fund that is managed by the SC Department of Health and Environmental Control.

In 2005, at the urging of RMDAC, the SC DOC and SC DHEC contracted with the College of Charleston to determine the economic impact of recycling in South Carolina. The study highlighted the contributions of the recycling industry to South Carolina's economic health and fueled interest and a higher level of commitment to the recycling economy. Because of the economic impact, the job potential and the higher than average incomes, stakeholders began working with the South Carolina Council on Competitiveness (New Carolina) to organize a recycling industry cluster in order to provide competitive advantage to each of the participating businesses and in turn to the industry and state as a whole. The cluster concept is based on Michael Porter's Competitive Advantage, which considers how a business system's individual processes and functions relate to other activities in a way that benefits individual businesses as well as the group of related businesses. The collaborative potential of the group creates value and competitive advantage much greater than possible by an individual business.

Cluster Initiatives

In 2007, private and public sector representatives met for the first time to begin the challenge of setting the direction for the recycling cluster. In different venues, the recycling industry cluster has solicited input on the issues facing the industry and potential industry advantages. Based on this input, a summary of the Strengths, Weakness, Opportunities and Threats (SWOT) exercise was conducted by industry stakeholders.

SWOT Analysis Summary

Strengths

- *Partnerships:* RMDAC, SC DHEC, Universities, SC Energy Office, Elected Leadership

- *Economic:* Equipment incentives, low cost power, skilled labor, inexpensive landfill costs, location, ports, rural backbone

- *Markets:* Abundant recyclable material, building recycling markets, existing recycling businesses

- *Regulatory:* Established legislation, $2 tire fee, 30% recycling mandate, landfill capacity

Weaknesses

- *Partnerships:* More industries need to be committed to recyclers, and use recycled materials (feedstock, fuels)

- *Economic:* Few recycling incentives, lack of skilled labor (especially in rural areas), recycling costs for government and individuals, fluctuation of commodity prices

- *Outreach:* Lack of awareness of state strengths, lack of participation from large companies, recycling means different things to different people

- *Markets:* Insufficient supply, location of tire recycling facilities needs to be within 150 mile range, fragile recycling markets, haulers do not want mixed waste, recycling businesses fragmented and generally small, lack of facilities to do small volume mixed recycling

- *Regulatory*: Lack of regulation, no enforcement, no consequences for not recycling

Opportunities

- *Partnerships:* Networking, for counties to work together to identify best practices, to increase profitability, to develop new processes and technology, university collaborations

- *Outreach:* Improve and promote recycling awareness and education, provide information on recycling drop-off points, work with schools, provide consistent message, promote product design to make recycling easier

- *Economic:* Funding and grant opportunities, involvement of retired executives, communication of strengths

- *Regulatory:* Pursue legislation for universal bans on e-waste and cardboard, higher tipping fees, one stream recycling

Threats

- *Economic:* High cost of collecting materials could cause local governments to stop collecting waste, cost of recycling vs. cost of doing the right thing, landfill costs are subsidized, foreign markets

- *Regulatory:* Recycling's impact on other functional and geographic areas is generally unknown, regulators don't look for middle ground

From the SWOT analyses and stakeholder input, the industry cluster developed a mission and vision for the cluster. Starting in 2007, with the help of

Department of Commerce staff, the cluster has developed annual action plans in order to gain momentum and strengthen the recycling industry.

Mission

The recycling cluster's mission is *to expand and strengthen South Carolina's recycling industry by establishing policy, building networks, promoting market development and leveraging existing infrastructure.*

Vision

The recycling cluster's vision is for South Carolina *to be a national leader in the recycling industry in terms of job creation, investment and providing access to sustainable markets for recyclable materials.*

Recycling Industry Group Action Plan Summary:

Job Creation and Investment

Goal: Foster a competitive and advantageous environment for recycling businesses

A. Talking Points
B. Legislative day and recycling policy issue and development
C. South Carolina Recycling license plate
D. Recruit New Members

Goal: Develop a comprehensive, measurable, multi-media communication program

A. Talking points
B. Legislative day and recycling policy issues
C. SC Recycling license plate
D. Provide input on marketing plan; network with Tourism Alliance/other clusters
E. Radio spots

Goal: Assist with recycling business development in South Carolina

A. Establish effective, audience specific communication tools

B. Determine voids in recycling industry and opportunities for new business by reviewing work of other recycling committees and Commerce Department
C. Recruit new members

Goal: Keep South Carolina Recycling on cutting edge in recycling knowledge and technology

A. Explore developing a best practices manual which addresses general recycling programs as well as specific commodities

Goal: Increase overall knowledge of South Carolina recycling workforce

A. Training programs

Access to Sustainable Markets

Goal: Increase access to supply chain for recyclable materials

A. Investigate matchmaking tools
B. Recruit new members – opportunity for clearinghouse
C. Determine gaps

Goal: Develop partnerships with research colleges and universities

A. Design recycling solutions competition along with a program description and competition guidelines
B. Contact schools, professors

Goal: Assist with recycling business development in South Carolina

A. Establish effective, audience specific communication tools
B. Determine voids in recycling industry – opportunities for new business by reviewing work of other recycling committees and Commerce Department
C. Seek new recycling industry members

Goal: Keep South Carolina Recycling on cutting edge in recycling knowledge and technology

A. Explore developing a best practices manual which addresses general recycling programs as well as specific commodities

Goal: Develop a comprehensive, measurable, multi-media communication program

A. Develop talking points/script
B. Provide Commerce Department with Input on market plan; network with Tourism Alliance/Other cluster representatives
C. South Carolina Recycling license plate
D. Radio spots – identify potential interviewees

Goal: Foster a competitive and advantageous environment for recycling business

A. Legislative day and recycling policy issues
B. South Carolina Recycling license plate
C. Recruit new members
D. Develop talking points

Successes and Challenges

Early on, cluster participants outlined operating committees focused on Business Environment, Firm Formation, Joint Marketing, Value Chain and Cross Functions, which looks at processes, human resources, market intelligence and research and development issues. Cluster participants have developed implementation plans, developed conference and webinar programs and conducted other educational efforts. They have marketed the industry with media notices, interviews, and even South Carolina's own recycling license tag! The cluster has developed relationships with state senators and house members and has discussed and advocated for policy that benefits recycling businesses and communities.

Despite the many successes to date, shifts in commodity markets and the downturn in the economy point to the importance of solidifying the cluster's direction in a long term, sustainable way.

Strategic Plan

In late 2009, New Carolina, South Carolina Department of Commerce, RMDAC, the recycling cluster (also known as the Recycling Industry Group) and the plan sponsors joined forces to take the recycling industry initiative a step further with the development of a strategic plan. New Carolina contracted with Clemson University's Jim Self Center on the Future to prepare a strategic plan focused on communications and policy. The plan is intended to provide a foundation for improved decision making by documenting the recycling market profile and challenges as well as developing options for implementation and change. The plan will provide the initial step for policy development and practices that advance the vision and mission of the industry.

CEO Roundtable

In addition to gathering the recycling cluster's input to date, one of the early steps in the planning process was to hear from the following representative industry leaders in a day long round table discussion held in winter 2010. Facilitated and staffed by the Clemson's Jim Self Center on the Future, New Carolina and South Carolina Department of Commerce, the forum took place in the offices of the Municipal Association of South Carolina.

Myra Carpenter Michelin	Kym Cleveland Omnisource SE	Harris Deloach Sonoco
Tamsin Ettefagh Envision Plastics	Gerry Fishbeck United Resource Recovery	Eric Foust Custom Forest Products
Elizabeth Garrison Ever-Green Recycling	Jerry Hayes SERDC	Ralph Taylor Waste Management
George Martin Leigh Fibers	Jennifer Taylor Republic	Marcy Thompson Sonoco

In order to stimulate conversation in particular focus areas, the following questions were posed during the roundtable session based on the cluster's established mission and vision. The summarized input follows each of the questions.

What needs to be done to position SC as a national leader in the industry?

- *Recycling containers would be highly visible and available.*
- *More training and awareness at all levels and heightened recognition of all potential recyclables including wood.*
- *Bans should be enforced on all recyclables in landfills.*
- *Curbside recycling should be more prevalent or required.*
- *Actively retrieve all the recyclable materials before they get to the landfill.*
- *Recycling is mature in the country but participation is poor. We need aggressive education and marketing including television spots about the best things to do with containers.*
- *Get the word out that South Carolina has a sustainable recycling industry and environment that supports sustainability goals and handles the materials of industries locating in the state.*
- *Raise landfill tipping fees to account for true costs.*
- *Since raising taxes is unlikely, we need other funding mechanisms.*
- *Pursue incentive based recycling and rewards.*
- *Our state should be better marketed as a recycling leader.*

- *We are among the lowest in the nation in residential recycling rates. We need more partnership between manufacturing, government and business to catch up with the rest of the country.*
- *More incentives are needed for manufacturing and a better understanding of supply and demand in the industry.*

- *Political coordination and leadership are needed so that South Carolina's business environment is friendlier to all business. The political will to enact thoughtful, long-term legislation is sorely needed.*

- *Stronger partnerships with academia are needed to develop recycling/waste solutions. Incentives should be provided for academic research that supports recycling and the needs of recycling businesses.*

- *Someone should do an economic model to show that more recycling participation by citizens reduces costs.*

Networks: Who are potential but unexpected and unrecognized bedfellows with whom the industry should align when it comes to job creation, investment and access to sustainable markets?

- *Retailers, major retail chains and distributions centers.*

- *Transportation, logistics cluster and other clusters…the hospitality industry offers enormous potential.*

- *Export partners and ports.*

- *Real estate associations. Sustainable neighborhoods are at the top of many agendas. We need to get down to homeowner and individual level too.*

- *Communications and media.*

- *Local governments – more curbside pickup is needed.*

- *Different industry partners –how do we build partnerships with industry in order to increase volume and respond to their needs?*

- *Consumers need to know how the whole system works.*

- *Packaging associations and research.*

Networks: Are there public/private partnerships or legislation that in your mind are notable models/potential case studies and worthy of exploration in order to advance the industry?

- *Look at Waste and Resources Action Programme (WRAP) in the UK, CA, Ontario, Manitoba, New England and PA.*

- *In the northeast, recycling is frequently mandated. Recycling is enforced.*

- *Partnerships should be established with industry. A lot of industry doesn't know how to recycle. Their waste is in a big and what seems insurmountable pile. While it can certainly be handled, it could have been handled easier and properly in the early stages.*

- *Greenville did not want to put recycle bins on Main Street. Non-profits came to the rescue with support for bins and then required that community service participants pick up materials. Here a recycling business (Ever-Green) worked with community at grassroots level.*

- *More partnerships between industry and government. Southeast Recycling Development Council is working with EPA to map the manufacturing facilities in EPA Region 4 that could use certain materials.*

Business Growth and Development: What can this group do to bring more manufacturers, suppliers, and service providers to the area?

- *Try to get stream of recyclables up.*

- *Change mindset of the southeast (30%) with education.*

- *Look at Georgia's recycling campaign and particularly the Atlanta "I don't recycle". (www.youvegottabekidding.org)*

- *Palmetto Pride is helpful but we need more.*

- *Need to focus on young people – MAKE IT FUN! We will see fruit twenty years down the road.*

- *Get spokesperson(s) that are recognized to speak for the issue. Football heroes and others. Males in the 18-25 age category are the worst recyclers. What would appeal to them?*

- *People talk about the thirty second tattoo. What sticks in a short exposure time? It is all about creativity.*

- *Look to marketing and business academia to get into the minds of the youth. How and what do they think? What resonates with youth?*

- *In SC landfills on an annual basis, 6% is carpeting and 30% is textile waste. How can we work with these industries to redirect this material?*

- *How do we compare across the country and is there a place we can go for accurate comparisons and to see how we are doing?*

- *We need to know and have more information that connects raw material and jobs.*

Business Growth and Development: When you think about your business, do you think state, region, country and/or global.

- *Of all of our customers, South Carolina promotes the least amount of opportunity from a recycling perspective. It is hard to work here when people say material is just not here. We know material is here, it is just not captured. The truck and transit fees are high but the landfill rates are so low. The system is imbalanced so comparatively speaking, recycling is not feasible.*

- *Northeast states ship to South Carolina because our rates are so low. Hard for markets to be competitive in South Carolina until the landfill fee structure is in place and rates are raised.*

- *South Carolina makes revenue by importing waste. This could be an opportunity if recoverable waste is imported too.*

- *We need to look for opportunities at landfill sites.*

- *Can we calculate the energy savings for using each of the recovered commodity types in the manufacturing stream?*

- *With more focus on carbon credits and LEED credits, we have an opportunity to increase commodity supply.*

- *We have the will to <u>not</u> landfill and we have some materials under control like plastics and wood. It would be helpful to have researchers look at waste. Where are there other needs and commodities with high volume that need waste solutions?*

- *Academic partnerships including technical research and research incentives need development. Sludge is a problem now. We need to focus on the research and development element and how we pay for it.*

- *Governments do not want to charge a fee for pick up. Citizens should pay a tax for the service and they should not have an opt out option. Leaders need willpower because this is an economic engine that pays. We need to educate more so that people see the connection.*

- *Volume does drive economic viability. There are some things that cannot be recycled. We need to stay away from commentary and instead decide what is the best way to dispose of things that cannot be recycled.*

- *Waste to Energy may be a way to recover what is left that can't be recycled.*

- *Where is the low hanging fruit? Where can we be successful early on? Half of the PET comes from the bottle bill states.*

- *We have a textile manufacturer that wants 100% PET and we cannot service them. How sad is that? Think of the lost revenue. The system needs work.*

- *Solutions to the supply problem lie in South Carolina. Yes, we can collect from Atlanta and New York but maybe if we had a bottle bill in South Carolina, that could move the needle*.

Business Growth and Development and Leveraging Infrastructure: In what areas does* South Carolina *recycling have a competitive advantage?

- *South Carolina has many empty textile buildings, we need to look at incentives for new business. We have land and trained or trainable workforce.*

- *The Department of Commerce's recruiting efforts.*

- *We have economic incentives – tax credits. Taxes are forgiven on some machinery.*

- *While we do not have an open checkbook, there is training money already in place.*

- *We need to walk the walk and talk the talk. Companies considering South Carolina look at the whole package. Is everyone doing their part to make South Carolina a successful environment? (Who recycles, how are the roads, how are the schools?)*

- *Tennessee has been successful with new business development. We should investigate what works there and why.*

- *The industry needs more science and engineering academic focus on waste stream management solutions and more design for recycling.*

- *The building codes should be changed to account for recycling in the design stages. While high rise complexes have trash shoots, they should also have recycling shoots.*

- *A better waste to energy business model that incorporates recycling material as a middle step is needed. A strong public education component is important or it will not fly.*

- *We should spend more time developing supply because size does matter.*

- *We need to prepare the public for a new world... life cycle thinking. It's a challenge here in the south; we are a very independent bunch.*

- *How do we prepare the world for the fact that waste is a utility – that it is NOT FREE?*

Leveraging Infrastructure: How can we maximize infrastructure?

- *We need to look and plan on a regional level.*

- *Industry is recycling because of corporate responsibility. Sonoco says no to landfill costs. By avoiding landfill costs, we are able to take on other sustainability and recycling measures. We started into this area because it was economically right. Now it is socially right.*

- *You want to sell the idea by connecting back to jobs, business prosperity – education, policy and legislation.*

- *Some recycle because it is the right thing to do, but they struggle with paying more.*

- *If the material is there and sound policy has been implemented, the physical infrastructure will follow.*

- *We need to build partnership and combine forces for the milk runs for niche materials or industrial hauls to and from remote locations.*

- *Identify the location of facilities and determine when haulers are on the road with empty containers. Can we marry different companies? The odds and ends are what take up landfill space?*

- *Look at the hub and spoke models. What Sonoco does for cardboard can be done for other commodities. The question is, "how we can do the same thing for plastics."*

- *In addition to Omnisource and Sonoco, how many other hub and spokes are out there? Do we need more structure including donating space or sharing these facilities?*

- *The hubs are a huge opportunity. For instance, Adidas deals with over 30 million pairs of shoes. When shoes are taken off the shelf they want something to replace it. Shipping is causing a larger and larger footprint.*

- *If goods were preprocessed, it would cut down on transportation fees. For example, bound carpets and crushed bottles.*

Marketing and Communications: What industry values are important to communicate and what should be a part of the recycling industry brand?

- *Recycling is good business for South Carolina.*

- *There is a true cost and a lost opportunity cost for throwing away rather than recycling.*

- *If we put recovered goods back into the material stream, we will see more JOBS in South Carolina.*

- *Why is it good to recycle? It creates jobs and business activity.*

- *Why should a company recycle or use recycled feedstock? Recycling provides lower cost raw material that uses less energy to produce. This is a story that needs to be told.*

- *Is there a way to get citizens to recycle in a long term way without a mandate?*

- *While I am not opposed to a bottle bill, why not a bill that deals with all types of bottles or even every commodity. In California, unredeemed fees do not go back to the bottler. Also, they have included gallon bottles.*

- *The importance of knowledge to this sector and continuing research and development should be communicated.*

- *In the recycling field, they say that 1/3 of people are environmentalists or people who do things because it is the right thing to do. Then, there are the people who need an incentive. Finally, there are the people who won't recycle unless there is a penalty. We need to target the people who need an incentive.*

- *We cannot make this work in a sustainable way unless we target all three types of people and work on all mechanisms including education (k-12), incentives…and mandates.*

- *Public service announcements. Think about the dairy industry and their cheese and happy cow connection. There's a market in recyclables that cannot be handled without a concerted effort.*

Policy: If you were legislator for the day, what would you do to increase recycling business development?

- *Recycling is a supply business. South Carolina needs an economic environment that allows business to support other businesses. We should recruit business that supports the industry with supply or service needs.*

- *A consistent and sustainable material supply will require policy.*

- *South Carolina needs a total tax structure overhaul and comprehensive tax reform. All things that are necessary and prioritized should be enabled with support mechanisms and funding.*

- *Fix landfill cost structure. True cost accounting should be available on landfills and recycling.*

- *We need better tax incentives for equipment purchases.*

- *There should be mandatory recycling of all recyclables with the burden on the entity that generates the waste.*

- *In addition to mandatory recycling, a composting component should be included.*

- *We do need legislation but we also need to be careful that we are not overbearing.*

- *There should be more Incentives to get materials recovered including tipping fees, pay as you throw, and transparent landfill costs.*

- *There should be more funding for a 'cool' marketing campaign.*

- *SC needs to mandate an advance disposal fee on everything that ends up in the landfill.*

- *We would encourage more public/private partnerships and try to avoid taxes.*

- *Similar to North Carolina's program, South Carolina needs a recycling program for ABC on-premise consumption facilities.*

- *Everyone should be charged a tipping fee with a tax credit at the end of the year. Proceeds must stay with recycling programs.*

- *South Carolina needs legislation that is more supportive of efficient transportation including addressing weight laws and haul size limitations.*

- *South Carolina needs a level playing field when it comes to recycling but proceeds from efforts need to be controlled by industry rather than the legislature so that they stay targeted to recycling initiatives and not used to*

cover other budget shortfalls. (Ontario has a model that should be considered.)

- *South Carolina policymakers (in South Carolina and in Washington DC) need to know how important recycling policy is to the state's wellbeing.*

- *There should be more attempts to ensure producer responsibility for product life cycle.*

IV. Inventory

Business in South Carolina

In recent years, South Carolina has steadily ascended into one of the national and international destinations in which to conduct business. Propelled by policymakers and business leaders, South Carolina promotes its friendly business climate as much as its natural features and general quality of life. Because of the state's concentrated focus on economic development, as well as some advantageous enticements for new businesses, the state has begun to receive worldwide recognition for attracting companies like Boeing, Michelin, BMW and Proterra.

From a transportation infrastructure perspective, the state's location halfway between New York City and Miami and its five interstate highways provide easy access for residents and businesses to Charlotte and Atlanta and then beyond. Charleston, in South Carolina's lowcountry, is home to one of the busiest seaports on the eastern seaboard. An integrated rail system along with the location, port and highway system, position South Carolina in a competitive light.

With no state property tax, no local income tax, no inventory tax and some corporate income tax advantages, South Carolina's tax structure is attractive to businesses seeking to maximize a return on investment. The state also provides numerous governmental grants and incentives to ensure that state businesses thrive.

South Carolina continues to garner high rankings across a variety of categories including:

- *One of the 10 best states in which to do business*, Chief Executive January/February 2009
- *The 5th most Pro-Business state*, Polling Corporate Real Estate Inc, June 2009
- *11th best state tax system for entrepreneurship and small business*, Small Business and Entrepreneurship Council, April 2009.
- *The nation's tenth fastest growing state,* U.S. Census Bureau, December 2009
- *Among 10 States with the lowest cost of labor*, Business Facilities, July 1009

In June 2010, Governor Mark Sanford signed the *Economic Development Competitiveness Act,* H. 4478, "aimed at enhancing South Carolina's ability to attract jobs and investment and compete in an increasingly global marketplace." The law allows tax credits for job creation, renewable energy and port use. It also reduces property taxes on some manufacturing properties and supports job creation by following private sector investment with public investment. This legislation, combined with positive national rankings, sets into motion some of the economic development pieces that will resonate across the state if they are combined with other needed improvements like comprehensive tax reform, education financing and policies that support sustainable recovered material feedstock.

Economic Impact

The *Economic Impact of the Recycling Industry* was compiled in April 2006 by the College of Charleston's Department of Economics and Finance. With the support of the South Carolina Department of Health and Environmental Control (DHEC) and the South Carolina Department of Commerce, the report examined the position of the recycling industry in the South Carolina economy. In the report the authors observed, "That recycling is beneficial for the environment is probably an uncontested proposition. What is becoming increasingly more obvious is that recycling contributes to the economic health of a state's economy." Though nearly 5 years have passed since the study was published, the findings demonstrate the industry's significant influence on the state economy. For instance, in 2009, alone, the recycling industry announced over $354 million in capital investment, created 1,354 new jobs and resulted in 18 new or existing companies investing in South Carolina.

The Economic Impact of the Recycling Industry in SC

- 37,440 jobs
- $1.5 Billion in Personal Income
- $6.5 Billion Economic Impact
- $69 Million State Tax Revenue
- Projected 12% Annual Growth
- Total Economic Impact in Five Years estimated to be over $11 Billion

The South Carolina state average salary is reported to be $31, 940 for all occupations in all industries including professions such as medicine, law and

engineering. The average salary for recycling jobs is $32,229, proving the strength and importance of recycling jobs (Hefner and Blackwell, 2006.) Recycling is not simply a catalyst for environmental improvement, but also a robust economic vehicle. The United States Environmental Protection Agency (EPA) affirms recycling is "a sound investment in a town, a state, and a region." The EPA recognizes that recycling:

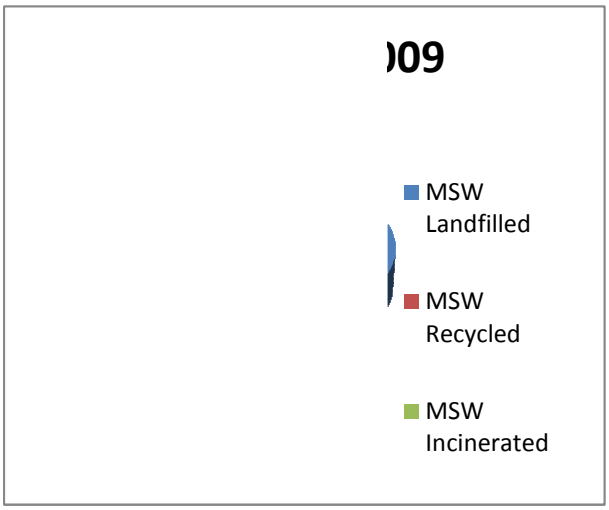
- *Creates Jobs* - Small investments in recycling collection can produce real benefits for a community in the form of well-paying jobs in the recycling industry, the vast array of businesses that support the recycling industry, and the manufacturing facilities that rely on recycling for feedstock.
- *Saves Money* - By diverting recyclable materials from the landfill, immediate economic benefits are produced through reduced disposal fees and the sale of recyclable materials.
- *Retains Local Employers* - By collecting recyclable commodities, industries that need these materials remain in the region and may even expand their operations.
- *Generates Tax Revenue* - Support of a vibrant recycling industry in the Southeast ensures continued receipt of sizable tax revenues that can be used to further improve communities.
- *Produces Economic Development Opportunities* - Increased collection of materials attracts businesses that are interested in processing or using the materials. Recycling helps United States manufacturers compete in a high-pressure global economy (EPA, 2006).

Solid Waste in South Carolina

South Carolina Solid Waste Policy and Management Act of 1991

South Carolina Department of Health and Environmental Control (DHEC) is authorized by the South Carolina Solid Waste Policy and Management Act of 1991 (the Act) to oversee solid waste management in the state of South Carolina. The Act sets statewide recycling and disposal goals and requires an annual report based on information provided by the state's 46 counties. Two types of solid waste are assessed, Municipal Solid Waste (MSW) and Total Solid Waste (TSW). MSW generally includes waste from homes, businesses, institutions, non-profits and industrial packaging /office waste. TSW is all solid waste including construction, demolition and land clearing debris and industrial solid waste.

Status of Recycling in South Carolina



Solid Waste 2009

South Carolina has a MSW recycling goal of 35% and a disposal goal of ≤3.5 pounds of MSW per person per day (p/p/d). Recycling and disposal rates have declined over the last two years. Consequently state recycling goals have become increasingly out of reach, while per person disposal rate goals seem progressively more attainable. In 2009, of the 4,139,373 MSW generated, 912,961 tons (22%) were recycled while 3,037,655 tons (73%) were disposed of in landfills. The remaining tonnage was incinerated. The 2009 recycling rate of 22% fell from the 2008 rate of 24%. Over this same time period, the amount discarded in landfills decreased by about 141,000 tons or 4%. Business and industry are estimated to generate between 35 and 45% of the waste stream.

South Carolina has no mandates in place that require businesses to report their numbers, but businesses and industry are estimated to generate between 35 and 45% of the waste stream. In some years, business numbers are reported and in other years, they are not. Additionally, accurate measurements are affected by different data collection methods employed by local governments. South Carolina adopted the US EPA's definition for measuring only MSW in 2000. Still, the TSW recycling is important to consider because in addition to MSW it includes construction and demolition (C&D) debris, process waste, and other materials recycled rather than landfilled or incinerated. In FY09, the amount of TSW generated declined by almost 2 million tons and the amount of TSW recycled dropped by about 1.7 million tons from a rate of 39% in FY08 to 30% in FY09. Declining MSW and TSW rates are likely the result of less purchasing power due to the economic downturn and reporting inconsistencies.

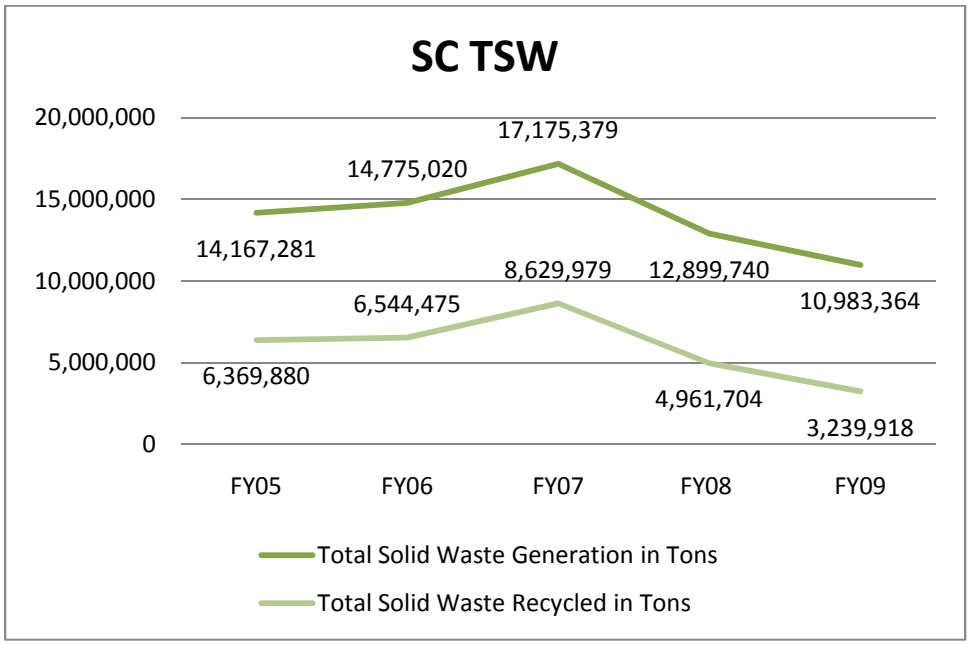


Figure 2: South Carolina Total Solid Waste and Recycling

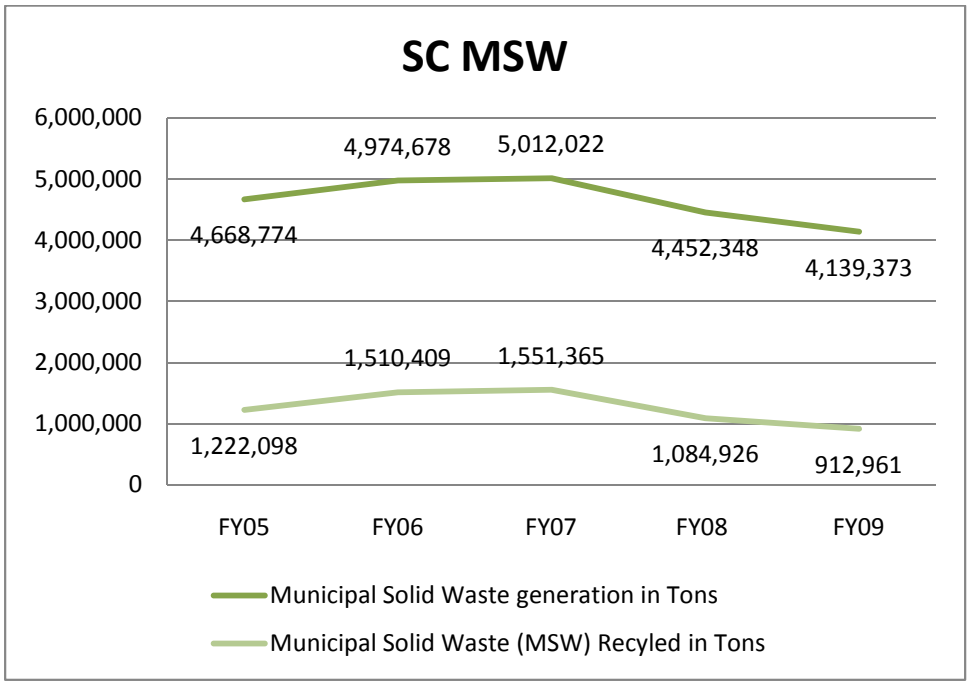


Figure 3: South Carolina Municipal Solid Waste and Recycling

The economic downturn has affected the revenues of local government recycling programs. Still, the number of curbside and drop-off recycling programs have remained somewhat stable with 81 curbside recycling programs in FY08 and FY09 and 637 drop off collection sites in FY09, up from 629 in FY08. From FY08 to FY09,

used motor oil collection sites declined by four sites to 825 across the state. On a statewide basis, approximately $31 million in landfill disposal costs were avoided by recycling. (Recycled MSW x $35 average tipping fee = avoided landfill disposal fees)

United States MSW Generation and Recycling

Data from the Environmental Protection Agency (EPA) states that Americans generated about 250 million tons of trash in 2008. Of that amount, roughly 33% or 83 million tons were recycled. Individual p/p/d waste generation reached 4.5 lbs, of which 1.5 lbs were recycled or composted. Two thousand eight waste generation numbers represent a small decrease from the 2007 figures.

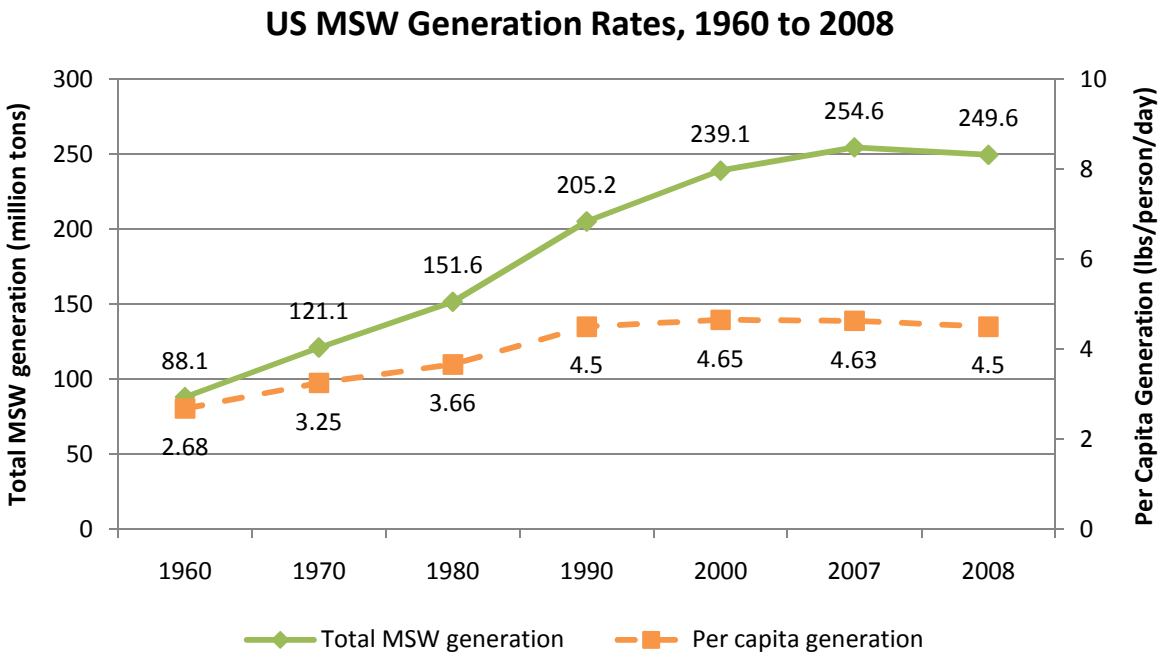


Figure 4: United States MSW Generation

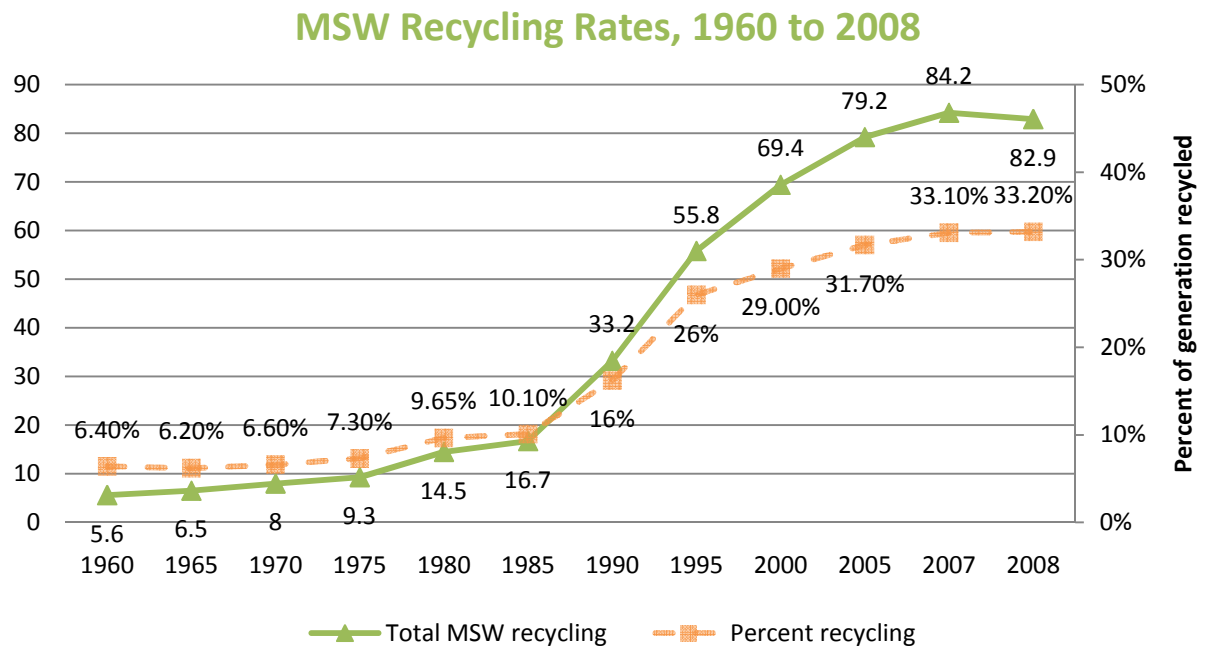


Figure 5: United States Municipal Solid Waste Recycling

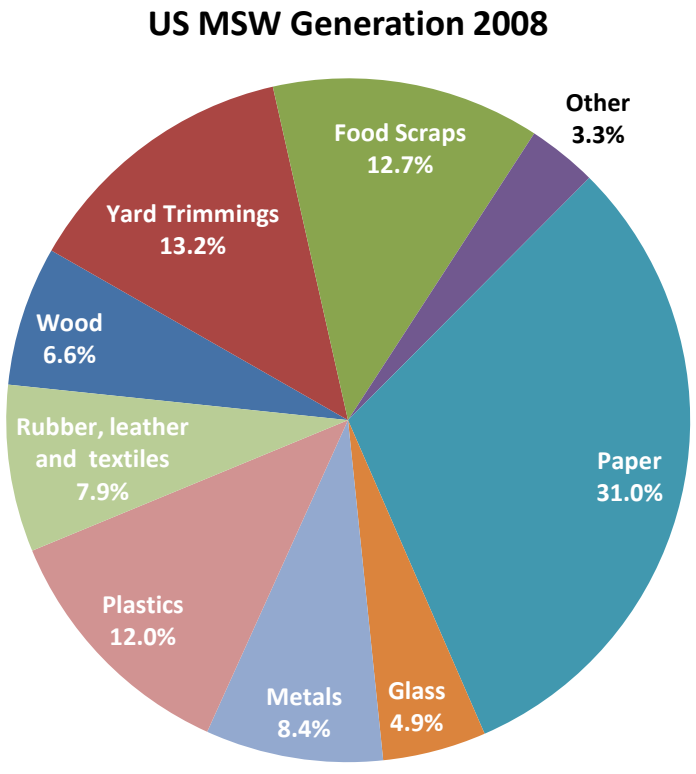


Figure 6: United States Municipal Solid Waste Generation by Material

South Carolina Commodity Overview

Glass, metal, paper and plastic provide the foundation upon which most local South Carolina recycling programs are established. These commodities are included in the state's Municipal Solid Waste (MSW) recycling rate. Most of the recovered material in South Carolina is sent to one of the state's seven Material Recycling Facilities (MRF) where it is then separated and sorted (*see Figure 7*). From the MRF, recycled materials are sent for end market utilization. According to the Department of Commerce, South Carolina has more than 300 collectors, brokers, and processors, and manufacturers products of recovered material (see figure 8).

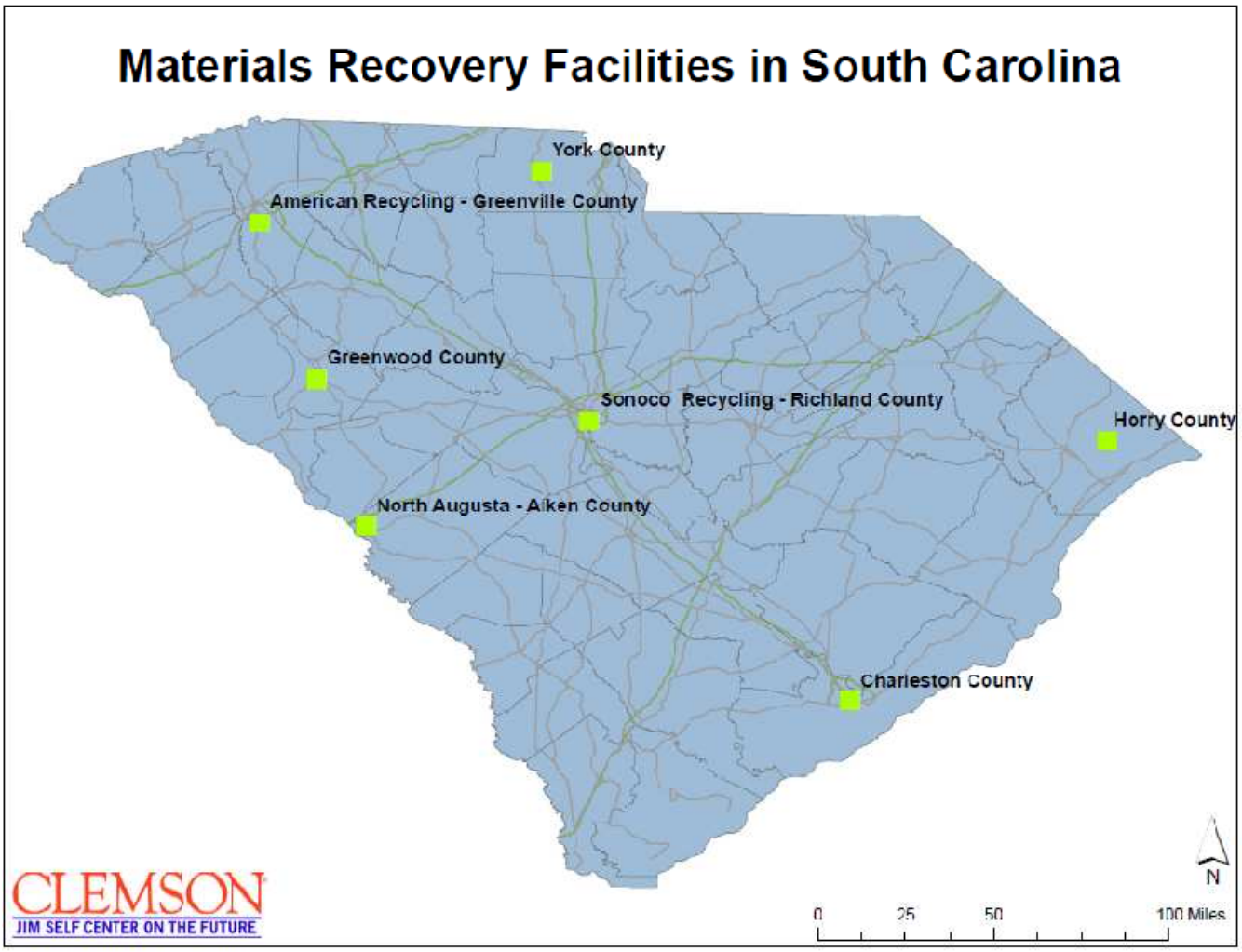


Figure 7: South Carolina Materials Recovery Facilities (MRFs)

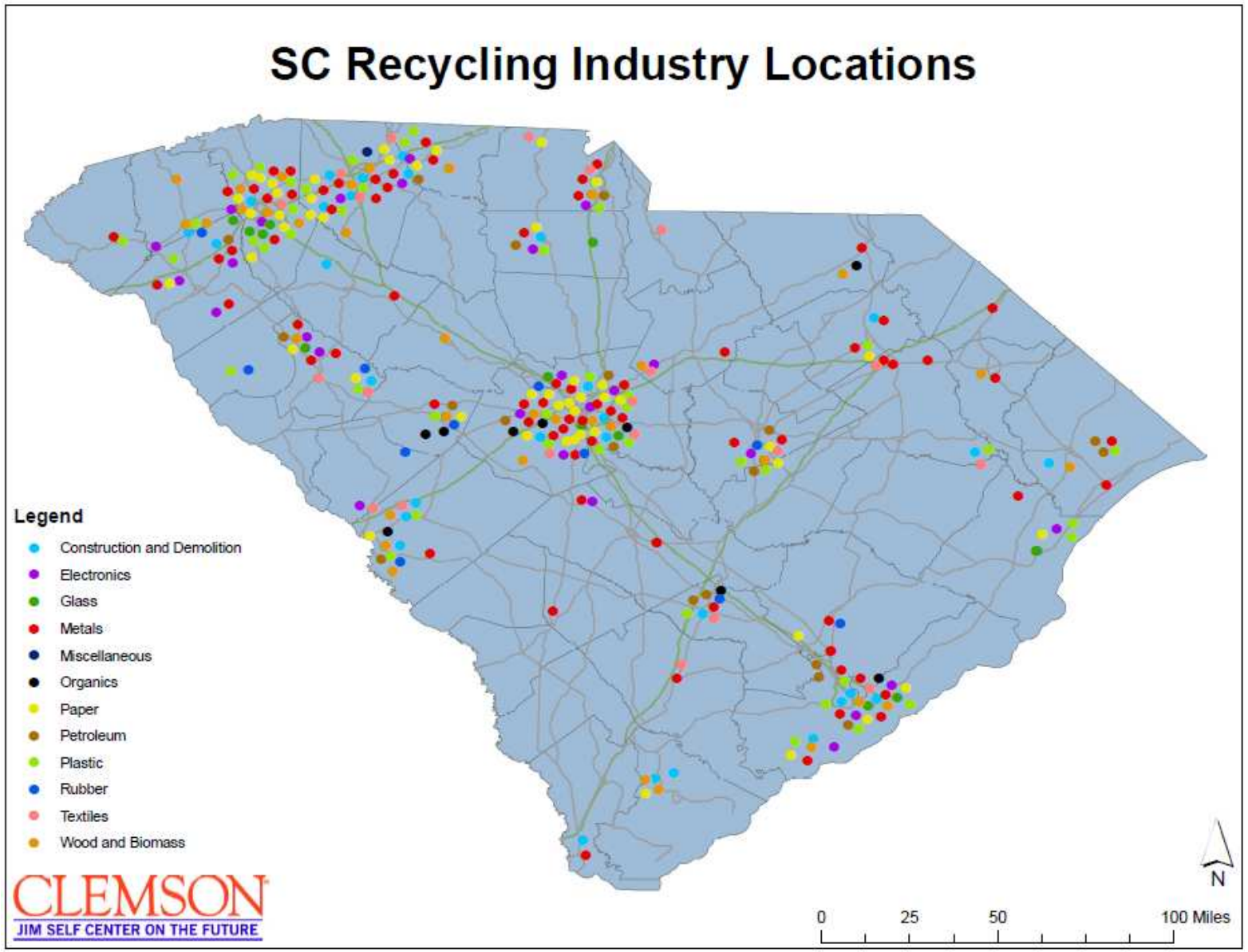


Figure 8: South Carolina Recycling Industry Locations

Glass

Bottles and jars make up the majority of all recycled glass. Nationally, the glass recycling rate was 28% in 2008. Glass beer and soft drink bottles were recycled at a rate of 35.6% while 15% of wine and liquor bottles were recycled. The amount of glass recycled in South Carolina decreased from 14,914 tons in FY08 to 14,148 tons in FY09, representing a difference of nearly 800 tons or about a 5% decrease.

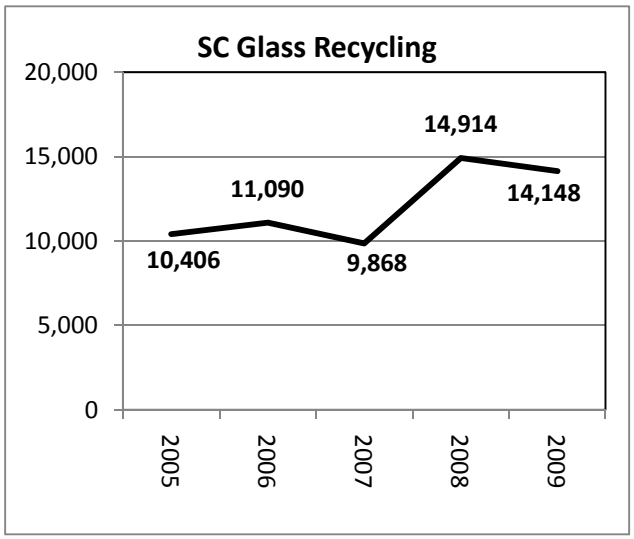


Figure 9: South Carolina Glass Recycling

While there are a limited number of curbside collection programs, most South Carolina counties collect glass in separate containers at drop-off locations. Thirty-three counties collect glass through their local recycling program. Market value for glass has steadily dropped from a high of $6 to $27 per ton in FY06 to $5 to $17 per ton in FY09, depending on the color of the glass.

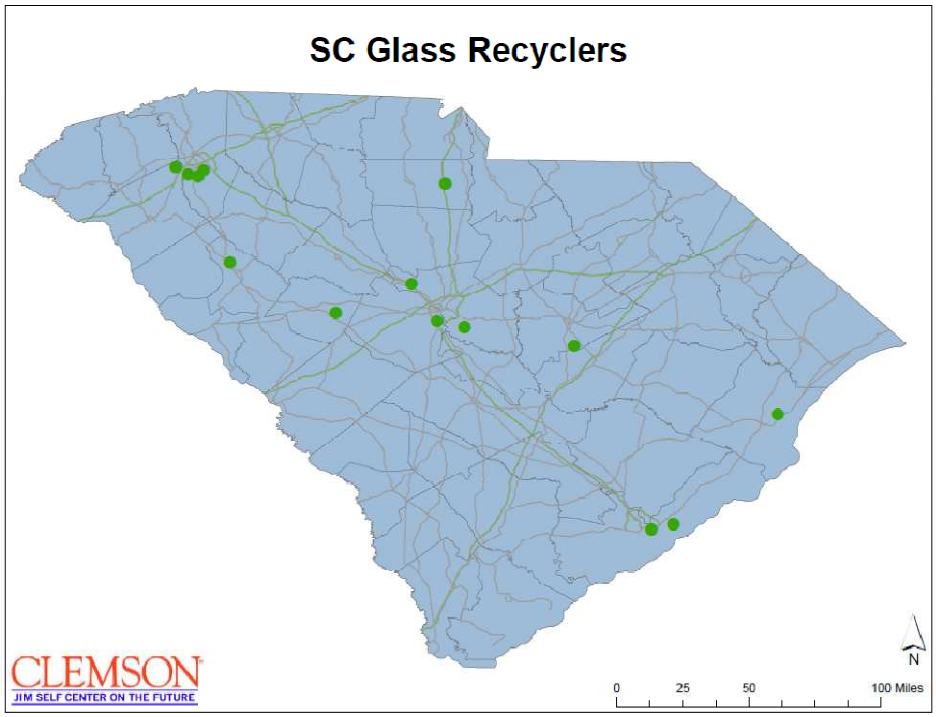


Figure 10: South Carolina Glass Recycler Industry Map

Metal

At 54.2% in 2008, nearly 30% of all new steel made in North America contains recycled steel. Steel recycling rates in the United States reached their highest recorded levels – 83.3% in 2008. The recycling of aluminum cans as well as metals found in appliances count toward the MSW recycling rate. Furniture, consumer electronics, metals in transportation equipment such as automobile bodies and C&D debris do not count toward the MSW recycling rate.

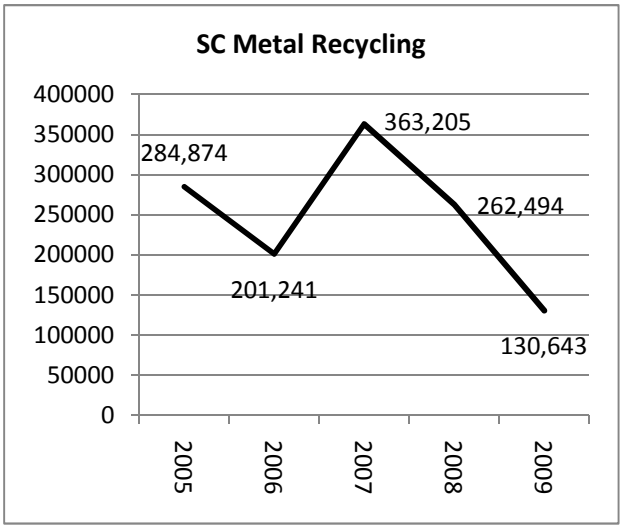


Figure 11: South Carolina Metal Recycling

Ferrous and non-ferrous metals are recycled in South Carolina. Ferrous metal is derived from iron or steel and includes appliances, furniture, containers and packaging such as steel drums and barrels. Non-ferrous metal includes aluminum, lead and copper. Products made from non-ferrous metals include containers, packaging, furniture, appliances, electronics and aluminum foil.

South Carolina saw a drop in recycled metal in FY09 of almost 50% totaling some 131, 851 tons. Counties throughout South Carolina earned an average of $147 per ton for scrap metal, $91 per ton for steel and $1,187 per ton for aluminum.

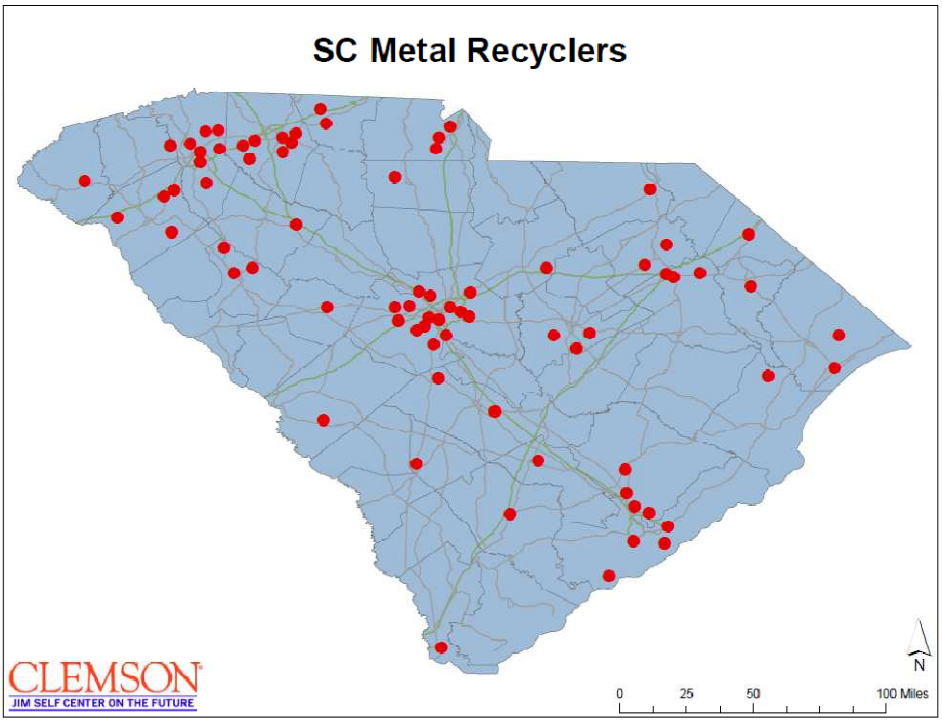


Figure 12: South Carolina Metal Recycler Industry Map

Paper

Recovered paper includes new magazines, office paper, corru containers, bags and some paperboard packaging. After collection, recovered materials are transformed into new paper products. The United States had a 57.4 percent recovery rate in 2008. South Carolina, which recycled 487,553 tons in FY08, increased the amount of paper recycled to 502, 908 in FY09 – an increase of 3%.

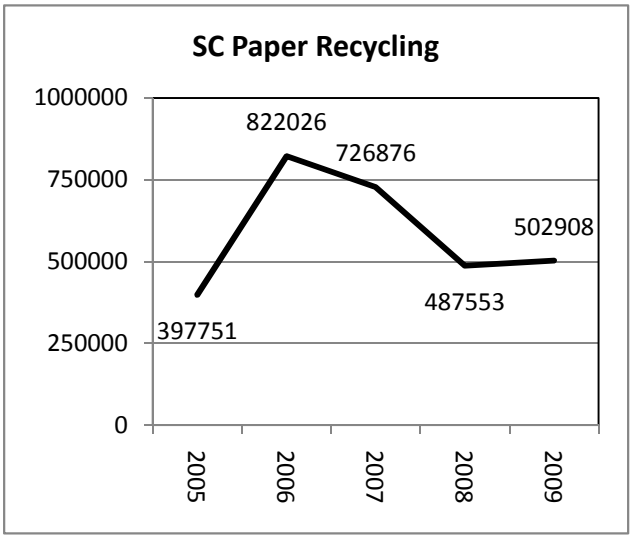


Figure 13: South Carolina Paper Recycling

Cardboard was the most recycled paper item in South Carolina followed by mixed paper and newspaper. At 352,548 tons in FY09, recovered cardboard represents 70% of South Carolina's total paper recovery. Mixed paper represented 16% of the paper recovered in South Carolina in FY09 followed by newspaper and inserts at 7%.

Average revenue dollars per ton of paper recycled decreased substantially between 2008 and 2009. In FY08 the value range was $95 -$113 decreasing to $58-$69 in FY09.

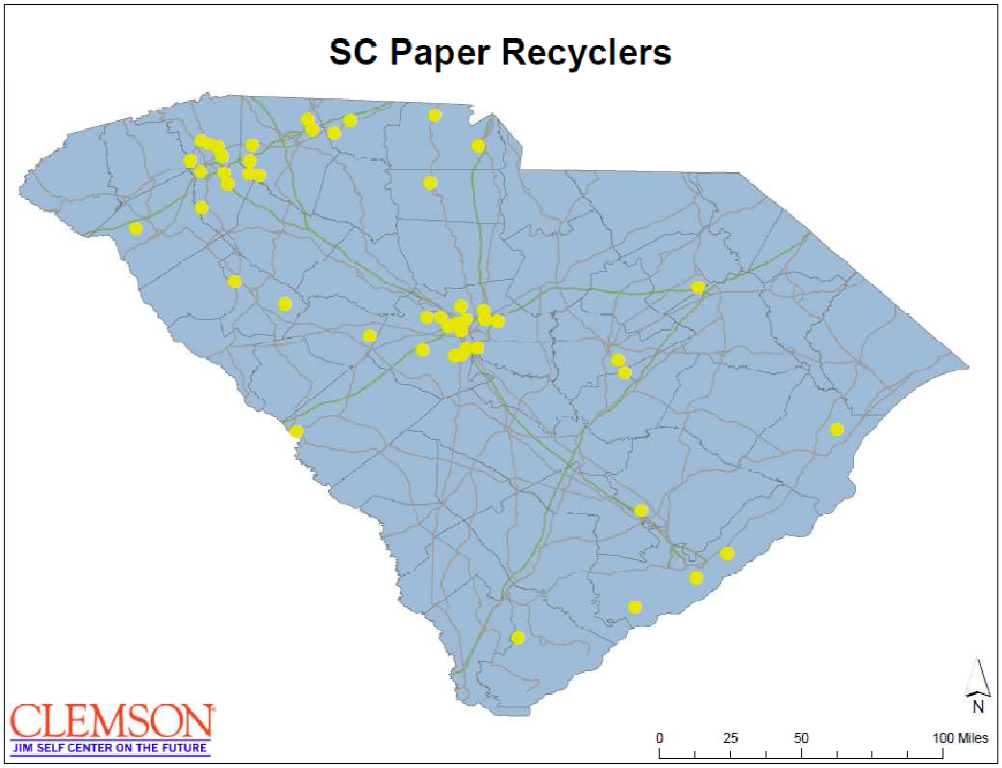


Figure 14: South Carolina Paper Recycler Industry Map

Plastic

The majority of the plastic collected for recycling from residential recycling programs consist of PET and HDPE bottles, but there is a push to find end markets for 3 to 7 plastics. Plastics are also found in durable (appliances, furniture) and nondurable (diapers, trash bags, medical devices, cups and utensils) goods.

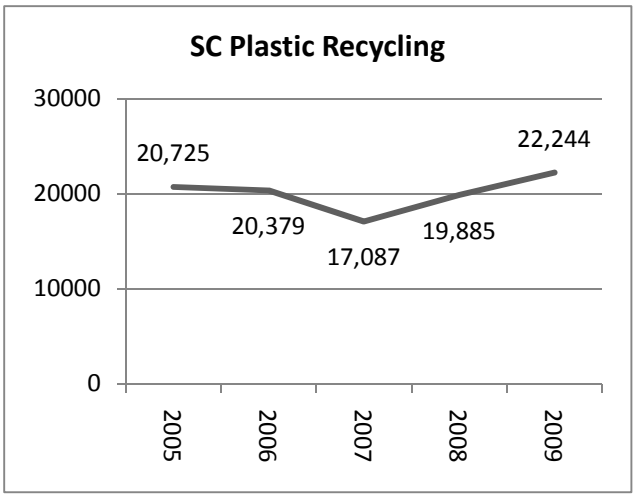


Figure 15: South Carolina Plastic Recycling

In South Carolina, the amount of plastic recycled in 2009 reached a five year high and increased by 12% between FY08 and FY09. Most of this plastic comes from businesses. The number of counties collecting plastic in residential recycling programs stayed the same at 44.

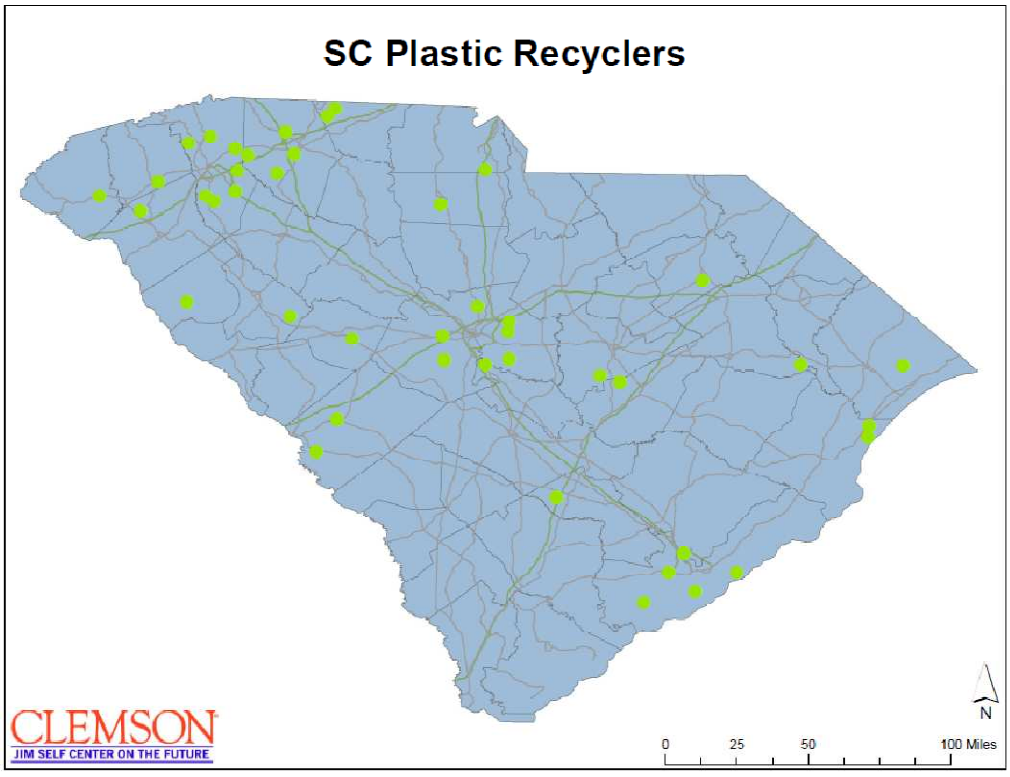


Figure 16: South Carolina Plastic Recycler Industry Map

South Carolina MSW Revenue

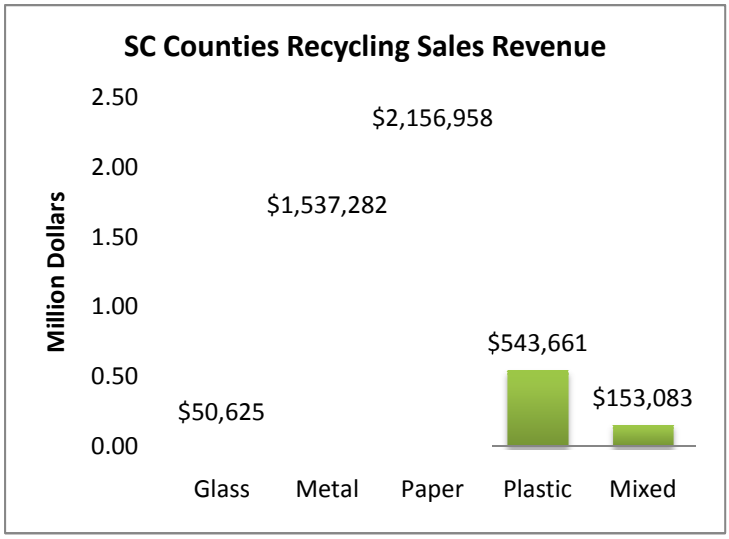


Figure 17: South Carolina Recycling Revenue

Though only 17 counties reported data on the amount of revenue they had received in FY09 from the sale of recyclables, the number is still staggering at $4,441,609, particularly when one considers that this figure does not include business revenues from recyclables. When one considers the percentages of each commodity collected (*see Figure 18*) and the total amount of MSW generation (*see Figure 4*,) it is evident that there is great potential for increased recycling activity and revenue.

Efforts to step up glass and plastic collection, as well as the increased ability to deal with mixed recyclables could yield both greater collection and revenue returns in the future.

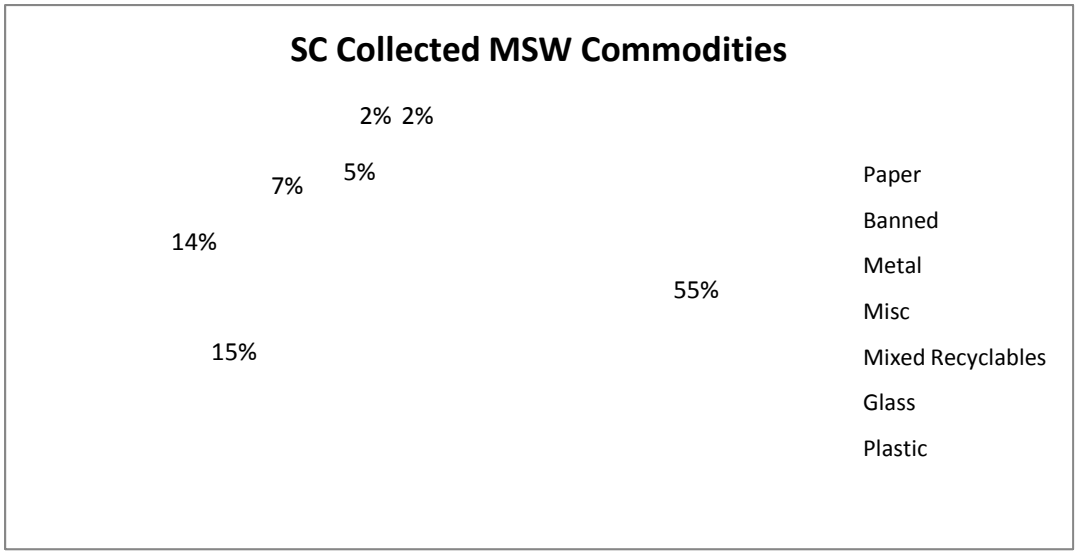


Figure 18: South Carolina Collected Commodities 2009

Legislation

Consumer behavior modification is often prefaced by legislative mandate. More and more, states, counties and municipalities use policy to provide a consistent supply of recycled materials. Electronic waste (e-scrap,) plastic bag and plastic container issues dominate current national recycling legislation. Both the number of states introducing legislation and also the number of bills introduced has risen steadily since 2005, with only a small decline in 2009 and likely triggered by a national recession.

U.S. Recycling Legislation (2005 - 2009)

Year	# of Bills	# Enacted	% Enacted	# of States
2005	155	33	21	37
2006	200	37	19	32
2007	515	91	18	49
2008	451	99	27	42
2009	468	90	19	45

Source: Resource Recycling 2009
Table 1: United States Recycling Legislation (2005-2009)

Over the past 5 years, national recycling legislation has consistently focused on a handful of prevalent topics. These topics range from scrap tire concerns in the middle of the decade to more recent interests in plastics and scrap metal theft. Table 2 details the percentage of bills introduced over the last 5 years by type.

U.S. Legislative trends 2005 -2009

Issue	2005	2006	2007	2008	2009
Scrap tires	13	9	6	4	4
Electronics	28	27	15	11	13
Plastics/containers	16	15	26	32	33
Product stewardship	NA	NA	NA	2	2
Scrap metal theft	NA	NA	14	16	7
State administration (e.g. fees, funding, grants, etc.)	12	10	5	17	5
Market development/other (e.g. mercury, BPA, etc.)	30	37	29	32	36

Source: *Resource Recycling, 2009*
Table 2: United States Legislative Trends 2005-2009

Federal Environmental Law

Prior to a critical look at local and state level mandates, it is important to note significant federal laws that influence recycling. United States environmental laws generally remediate issues rather than eliminate waste. In large part because waste has already been created, policies seek to encourage or reward pro-active life cycle processes. The following is a list of major federal environmental acts:

The National Environmental Policy Act (NEPA)

Passed in 1969, NEPA is one of the oldest federal environmental protection laws and one of the first laws written to establish a broad national framework for protecting the environment. The purpose of NEPA is to ensure that the government researches and considers potential environmental effects before undertaking any major federal action. As part of this consideration, the government must complete Environmental Assessments and Environmental Impact Statements for any action they contemplate.

The Clean Air Act

The Clean Air Act of 1970 contains detailed provisions that regulate air emissions from various sources. Ensuring compliance with the Act, as with most other federal environmental laws, is the responsibility of the U.S. Environmental Protection Agency (EPA). In that regard, the EPA was empowered by the Act to create National Ambient Air Quality Standards (NAAQS), which set acceptable levels of emissions from both stationary and mobile sources. Initially, it was the goal of the EPA to establish and reach NAAQS for all areas of the country by 1975. Unfortunately, the goal was not achieved, and in 1977, the Act was amended to create, in effect, an extension of the deadline for areas that had not reached compliance levels. Later, in 1990, the Act again was amended to address areas of concern that had come to the forefront in the twenty years since the Act was implemented. The initial version of the Act either did not address, or did not sufficiently address, issues such as acid rain, ozone depletion, and air toxins.

The Resource Conservation and Recovery Act (RCRA)

RCRA allows the EPA to control the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also contains provisions for the management of nonhazardous solid wastes. In practice, RCRA complements the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the two, together, provide mechanisms for controlling all hazardous waste situations. While RCRA focuses upon active and future facilities, CERCLA deals with abandoned or historical sites and emergency situations. In 1984, the federal Hazardous and Solid Waste Amendments (HSWA) were passed by Congress. HSWA amends RCRA to require the phasing out of land disposal of hazardous waste. To accomplish this goal, and to respond to other insufficiencies in RCRA, HSWA also created greater enforcement authority for the EPA and more stringent hazardous waste management standards. With the phasing out of land disposal of hazardous waste, EPA soon discovered that new storage issues were coming to the forefront. In 1986, an amendment to RCRA was passed which allowed the EPA to address specific issues and concerns related to the underground storage of petroleum and other products.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

In 1980, Congress passed CERCLA for the purpose of addressing how uncontrolled or abandoned hazardous waste sites, accidents, spills, and other emergency releases of pollutants or contaminants should be handled. The Act creates a federal "Superfund" to clean up, contain, or remove pollutants and hazardous materials in these situations. CERCLA is enforced by the EPA. Under the Act, the EPA has the power to investigate the parties responsible for the unsafe abandonment, spill, or release and require their participation in clean-up efforts. If the offender cannot be found, or refuses to cooperate, the Act gives the EPA responsibility for cleaning up orphaned sites or situations. Once a "response action" to a situation is completed, CERCLA allows the EPA to recover the costs of the action from financially solvent individuals and companies who were involved.

The Superfund Amendments and Reauthorization Act (SARA)

This 1986 federal act reauthorized CERCLA to continue efforts to clean-up hazardous waste abandonments, spills, and releases. Some provisions of SARA specifically address problems or concerns that arose at specific CERCLA involved sites. Title III of SARA created the Emergency Planning and Community Right-to-Know Act (EPCRA.)

The Pollution Prevention Act

The Pollution Prevention Act was passed in 1990. The Act includes provisions on reducing the amount of pollution in the environment by making changes in production, operation, and use of raw materials by both private industry and the government. The Act is proactively focused on source reduction of pollution, rather than reactively focusing on how to deal with pollution once it has entered the environment. An area of the Pollution Prevention Act, which has had a dramatic and recognizable impact on the public, is the push towards recycling and reuse of materials.

Sources: (Findlaw , 2010)
(SC DHEC, 2009)

The Passage of Major Federal Environmental Law takes place infrequently. For this reason, it is important for states to create policy that proactively contends with potential environmental concerns.

South Carolina Environmental Law

Until the 1970s, water was the predominant focus of South Carolina environmental law. In 1971, the South Carolina Board of Health enacted regulations that prohibited open dumps and established standards for solid waste disposal sites. Then in 1991, South Carolina passed the Solid Waste Policy and Management Act. The Act set up the Department of Health and Environmental Control's (DHEC) solid waste regulation development, compliance and enforcement. In addition, the Act set up DHEC's Office of Solid Waste Reduction and Recycling to provide technical assistance, grant funding and educational programs to local governments, schools, colleges and universities and the public. The Act requires that state agencies annually report on their recycling activities

and purchase recycled goods and supplies. The Act originally set a statewide recycling goal of 25 percent and a goal of reducing the amount of waste disposed of at MSW landfills and incinerators by 30 percent. Each goal was calculated by weight and measured from the total amount of waste (TSW) generated, not simply municipal solid waste (MSW.) Both goals were to be met by fiscal year 1997, and were reached.

In October 2000, the Solid Waste Policy and Management Act was amended to reflect new recycling and waste reduction goals. The recycling goal was increased to 35 percent of the MSW stream with a FY05 deadline. Waste reduction goals also were changed to reduce the amount of MSW disposed of to 3.5 pounds per person per day (p/p/d) with the FY05 deadline. The state failed to reach either goal. A detailed table of 2009 – 2010 South Carolina Recycling Legislation, as well as major recycling legislation for surrounding states can be found in Appendices D-F.

V. Vision, Mission, Goals

Vision: The recycling cluster's vision is for South Carolina *to be a national leader in the recycling industry in terms of job creation, investment and providing access to sustainable markets for recyclable materials.*

Mission: The recycling cluster's mission is *to expand and strengthen South Carolina's recycling industry by establishing policy, building networks, promoting market development and leveraging existing infrastructure.*

To realize the recycling cluster's vision, clear goals were developed to provide a foundation for the decision making process. The following goals were identified by the recycling cluster in previous meetings and fine-tuned based on CEO input.

Goals

Communications
South Carolina's recycling economy will be prominent and respected in the quest for state prosperity.

Networks and Collaboration
South Carolina will have a comprehensive recycling industry network that provides compelling rationale for widespread industry connections and collaboration.

Leverage Infrastructure
South Carolina's recycling industry will leverage its assets to increase value and strength and overall competitive advantage to its individual business components and the industry as whole.

Business Development and Recruitment
Build a critical mass of sustainable recycling related businesses in South Carolina.

Research and Education

South Carolina will be on the cutting edge in recycling knowledge, technology and economic enterprise.

Policy

The Recycling Industry Group will facilitate strategic policy decisions that foster a sustainable and prosperous recycling economy.

Organizational Development

The recycling cluster will have an organizational structure that includes procedures and processes that represent and optimize the value of the recycling industry and its component businesses.

VI. Implementation

Several areas of consideration must be examined on the path to goal realization. Identifying current dynamics, exploring future opportunities, and analyzing tactical approaches for implementation are vital to ensuring that efforts are focused and efficient. The following sections elaborate on the issues and potential implementation strategies to meet the goals.

Communications and Marketing

Given a wide range of interests and motivations, communications must appeal across audiences. Consider the citizen who decides whether or not it is important to recycle or governments concerned about fiscal responsibility and demands for recycling incentives. Think about the recycling business seeking commodities and ways to transport these goods or the decisions of legislators that can solidify supply with policy mandates. Industries are constantly analyzing how and at what cost they will deal with their waste and meet their sustainability objectives if they locate in South Carolina. Also, consider the need to keep the membership informed and involved and the interest of potential partners. All of these entities and functions are vital to the recycling economy. A strong communications strategy conveys the importance of recycling as well as opportunities for initiative and engagement. Obviously, communication that resonates across all audiences is important, but to be compelling and sustaining, communication must also engage the senses and needs of individual target groups with specific messages, information, and tools.

Goal:

South Carolina's recycling economy will be prominent and respected in the quest for state prosperity.

Tactics:

- **Develop an integrated, professional public relations campaign that pushes the connection of public responsibility for recycling and South Carolina's economic prosperity.**
- **Increase overall knowledge of the South Carolina recycling workforce and business potential.**

- **Educate state residents, businesses, and elected officials on the true costs of solid waste disposal and the need to develop sustainable, feasible, and more cost effective ways to deal with waste.**
- **Engage in advocacy opportunities related to recycling related business development.**
- **Build coalitions with policymakers at the federal, state and local levels.**

Who Is RIG?

Recyclers, Collectors, Processors, Haulers, Producers, Citizens, Government

Cluster, Group, Alliance, Partnership, Collaborative

Business, Industry, Community

Helping Business or the Industry Thrive, Prosper, Advance

Accelerating SC's Recycling Economy…

What is in a Name?

Currently, the recycling cluster is known as the Recycling Industry Group or RIG. A name is the first step in building identity. RIG works for the already involved entities. Does it say enough? What about for potential participants? Does the name Recycling Industry Group suggest action, alliance, expertise or change? If we are aiming for more people to participate and benefit from RIG's activities, does the name, Recycling Industry Group, convey a narrow field or does it appeal to the small business that would benefit from collaboration or to the non-profit and others important to a successful recycling economy? More importantly, what are the qualities that RIG wants to communicate? As part of the message development and branding process, RIG should consider the meaning, recognition and whether the name is likely to be remembered. Does it sound right? Are you enthusiastic about the name? Will it look good or sound good in print or audio? Finally, to avoid confusion, before a final naming decision is made, is the name being used by another organization or does it have a meaning that supports or does not support the Recycling Industry's vision? While the industry considers its message, brand and roll out of this information, the opportunity is ripe to assess its name.

What is the Message?

Message Summary

Waste disposal costs are subsidized. In true cost accounting, recycling increases material volume which provides feedstock for more production leading to more jobs, a healthier economy and state prosperity.

Our multi-tasking, technologically driven world has increased the importance of the message. Its strength in the competitive arena among similar entities is one factor. However, with marketing messages of all types integrated into every aspect of our lives, the question that must be addressed is "what do we want people to know about the recycling industry that will stand out among the other messages competing for our audience's attention?"

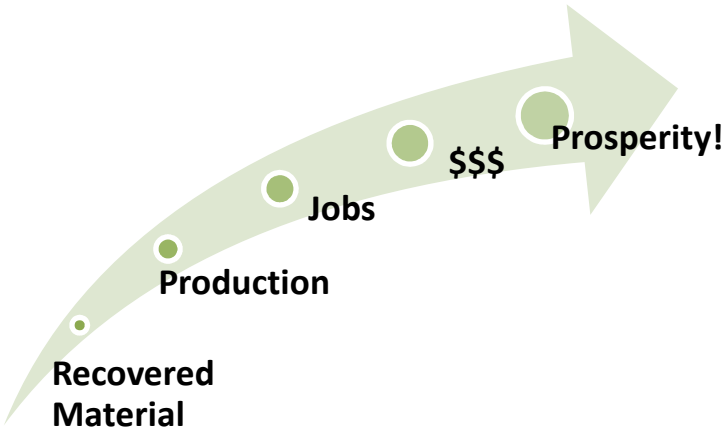
While simple in concept, it is vitally important to step back and consider what the organization seeks to gain by getting the word out about recycling and the industry cluster. Is there a material supply shortage? Are there new regulations coming on board that will impact recycling businesses or should there be? Is there public or political pressure… or apathy? Is it time for behavior change? What should people know and to whom should the message be directed? More importantly, what messages are important enough to stimulate positive action in this audience?

Message Suggestions from the Forum

Forum participants suggested a range of messages that should be conveyed. Obviously, the messages target different audiences: the general public, recycling businesses and the producers of recovered materials.

1. Waste is a utility for which there is a cost. Frequently these costs are hidden or subsidized. In fact, the true costs for landfill disposal and recycling should be assessed and publicized so that citizens better understand who is paying for what, in what form these costs are being covered, how much they are paying and what is subsidized.

2. Recycled goods provide industry with feedstock leading to business and job growth.



3. South Carolina is a major player in the recycling industry with a range of suitable, infrastructure ready destinations that can cater to a variety of market sectors.

4. Size matters in the recycling industry. More volume equals more production, leading to more dollars for the state and more jobs. More living wage jobs lead to greater South Carolina prosperity.

5. The recycling industry is a major and vital economic engine for the state.

6. Recycling is convenient. (Participants said they want to be able to relay this message but in many parts of the state, it is not the case.)

Suggested Partnerships from the Forum

When asked about connections with potential partners, forum participants suggested numerous partners ranging from the general public, other recycling businesses, government leaders and industries already in the state or looking to locate here. They discussed looking at profit and non-profit agencies, trade associations, in rural and urban areas and even connections within the southeast region. *(See Figure 19 under Networks and Collaboration for list of potential partnerships.)*

Branding

A positive well formulated brand has the potential to increase business value, recycling participation, partnerships and investment. In this realm, professional guidance is well worth the investment. While the brand may include a logo, a watermark or a slogan, these deliverables are only one part of the brand. The brand is the personality of the organization that integrates the organization's

philosophy, customer interactions, employee communications, and the advertising/marketing efforts. A thoughtfully planned philosophy is the foundation for an organization's name, message, and brand. Developing this organizational philosophy also is the first step to reinforcing the brand among current and future constituents.

Elements of a thoughtfully planned philosophy:

1. What does the organization offer? Define the qualities of these services.
2. What are the core values of the organization?
3. What is the mission of the organization?
4. What is the organization's specialty?
5. Who is the organization's target market? Who is attracted to our efforts?
6. In a few words, why does the organization exist?
7. What is our organization's personality - sophisticated, forward thinking, creative, energetic, inclusive? What qualities do we want to rise to the surface that will speak to our base and get the attention of our prospects?
8. How do we use the information above to build a relationship with the target markets?

To be meaningful, branding materials will relate back to questions posed above. Once the branding process is underway, it is expected that the branding materials will be tested among a subset of the current and potential target audiences to ensure that materials reflect the organizational philosophy. As the recycling brand is developed, consider what standards will reinforce the brand and the organization's role in delivering the brand. Messaging, colors, material components (for instance, the percentage of recycled material in the paper stock), font sizes, spacing as well as who can use the materials, and under what circumstances, are commonly standardized for branding purposes.

Of course, the brand is only as good as the people behind it...and the people in front of potential constituents. Consider the spokesperson or persons and

whether these points of contact are on the same page as the organization in terms of key messages, core values, brand attributes, measures of success and processes for handling media inquiries.

Strategically identified business leaders can carry significant weight in delivering the message among community groups. The recycling industry can develop a high level community leadership presence throughout different areas of the state and in many cases, these leaders are already participating in Chambers of Commerce, Rotary, Economic Alliance Groups, churches, schools and sporting events. In the early stages of implementing the planning strategy, it will be important to enlist key leaders from all parts of the state so that through their input, they have a personal stake in the initiative's success.

Tools

Broadcast and Print Media

The media plan will build and hold the connection between South Carolina's recycling industry and state, regional and national media. Once the brand is established and informative materials on timely topics are developed, sharing this information with new audiences and solidifying the existing constituent base will be the challenge.

Paid Advertising

Well placed paid advertising in select outlets allows the organization to frame its message on its own terms with more say on when, where or how often it will be mentioned or printed. While there is a cost, message control is important and professional input on design and the best vehicles for dissemination has long term benefits. When the recycling industry considers their potential audience outside of South Carolina, this targeting of successful media outlets will become even more important. Given the marketing capabilities of New Carolina, the Commerce Department and some of the involved industries, they may be able to provide some initial guidance, direction for contracting specifications and success models in the paid media area.

Paid Advertising Case Study

The Georgia *You Gotta Be Kidding!* (or I don't recycle) Statewide Recycling Campaign was launched by the Georgia Department of Community Affairs in June of 2009. Through the campaign, Georgia sought to grow statewide recycling volume, decrease recyclables being wasted, educate the public and key stakeholders on the benefits and importance of recycling, and encourage recycling participation by connecting emotionally with Georgians.

Through extensive pre-campaign research, the state, along with public relations firm Hill and Knowlton, found that non-recyclers perceived recycling as an inconvenient practice – often times even when a curbside recycling program was available. Because everyone has a different definition and perception of recycling and what it means to be a "recycler," the campaign sought to answer the question "how can recycling fit into my daily routine?"

The partners identified their target audience as the 45% of the population classified as non-committed recyclers who recycle with less frequency than the general public, or not at all. Non-committed recyclers say it takes too much time to separate recyclables and that they would recycle more if it was easier. Typically, non-committed recyclers were ages 25-34 years old.

The *You Gotta Be Kidding* campaign is centered on a cast of characters, with excuses for not recycling. These excuses were indicative of excuses heard during campaign research. The characters, targeted to Georgia's 25-34 year old population, were used in outdoor signage, print and online advertisements, radio PSA's, direct mail, and through marketing strategies such as t-shirts, koozies, coasters, and flat board cutouts of the cast.

The campaign developed two websites, targeted to specific audiences. GACampaignCentral.org was designed as a place where community leaders could learn more about the campaign in order to help initiate it successfully in their own community. For the general consumer, *YouGottabeKidding.org* was designed as both an informative and entertaining place where consumers could learn more about effective recycling practices. The campaign staff also set up a Facebook page and Flickr Gallery.

The campaign roll-out began with a statewide media and marketing campaign targeting radio spots as well as events in restaurants, bars and in public

settings to kickoff local efforts. An unprecedented 168 stakeholders, representing over 100 communities, launched the campaign within the first 6 months. Between June 2009 and April 2010, 206 community events promoted recycling with over 260,000 attendees attending. Because of the innovative nature of the campaign it generated an enormous amount of buzz including: 150+ news stories, 50+ radio stations airing the campaign PSA, and an Award of Excellence from the EPA.

Preliminary results from the campaign emphasize that the total tons recycled at events in Georgia increased by 48% with over 47.3 tons collected in 2009. Further research is needed to report an overall increase in statewide recycling. In the first 6 months of the campaign, $524,000 was raised to fund the campaign.

Public Relations:

How do we get the message, stances or general information out in the media? Free media is valuable for organizations with limited funds but there are limitations on control of the message. The message, information and study materials and messengers are critical to the success of a public relations campaign. Informed, diplomatic spokespeople who recognize the issues as they relate to the breadth of the membership are the most valuable asset in getting the word out.

The recycling industry has been covered in publicly supported radio and television including SC ETV's *Big Picture* and SC ETV Radio's *Business Review* and *Your Day.* Certainly these endeavors should continue. Upstate, midlands and lowcountry business journals circulate at least once a week in print and online versions. The industry is covered periodically in these publications and efforts to engage their readers should continue. Similar journals also are available in Charlotte, Atlanta and other parts of the southeast region and as information seems relevant, stories should be posed to editorial boards of regional papers and journals.

Free media requires strategic and constant attention. An important early step is to arrange meetings with the editorial boards of major newspapers and with radio and television broadcast officials in charge of program development to let them know of the recycling industry's stories, issues, and stances. It is also

important to develop relationships with individual reporters by helping them understand the organization and the issues related to recycling. Reporters should have advance notice of upcoming speakers, celebrations, events, and awards. New job announcements and stories of innovation and creativity in the field garner positive media attention. The recycling award winners make great stories particularly when a press notice and winner photo is provided. In all cases, provide media with information that you would like to see in print and that is clear, concise, and if available, visual (maps, charts, or tables). When studies or reports are finalized and results are notable, an organized press conference can provide long terms benefits and reporters will remember industry spokespersons as the 'go to' sources for recycling information. Briefings targeted to state or local policymakers and a recycling speakers bureau provide additional opportunities for media contact.

Once the organization has branding, research, or more recycling stories to tell, it may be useful to learn more about the South Carolina Press Association and the South Carolina Broadcasters Association and other related professional associations. Research whether meetings are open to the public, and if there are opportunities for participation on their programs or opportunities for booths or displays at their professional meetings.

Collateral Materials

The introduction of updated recycling industry branding presents the opportunity to develop fresh, new materials including brochures or posters. Examples of collateral materials follow.

- Brochures with updated messaging and photographs should be released.
- Talking point cards/sheets for advocates. These materials are best targeted to specific audiences. Talking point sheets with study findings or addressing particular policy overviews are helpful if they are distributed to appropriate audiences.
- Baseball type card with recycling facts, model recycling projects or the South Carolina recycle awards can be targeted to general audiences. The idea is to have something that someone want to pick up, to see what it is and then to read it! It might make an interesting collectible for recyclers or could be framed as an award for recycler of the year awards. Winners

could use the print set up to copies made for their business. It would stand out from other business cards and can be used for booth or event take aways.

- Retractable, lightweight, human scale, stand alone banners provide an easy and attractive way to display important consistent information about organizations. They are useful for speaker series backdrops or conference display areas. Once the branding elements are finalized, professionally designed and printed banners can visually convey the recycling industry's message or messages. Eventually, given the broad target audience, it may be worth developing banners that can be presented together as a series to tell a more complete story of the curb to product life cycle. These pieces educate as well as market the industry.
- Once a logo or watermark is established, a sticker developed to display in front offices or windows would signify support of the recycling industry's plan for South Carolina. Over time, the logo will be seen as a symbol of legitimate recycling practices statewide and lend credibility to businesses who display it.

Website and Electronic Newsletter

The development of an easy to use and informative website is paramount to establishing the recycling industry's presence in South Carolina and the nation. This website should serve as a resource for timely, consistent and engaging communication with the constituent base and others interested in the organization.

Electronic news briefs and scheduled newsletters offer topical and ongoing communication for its members but also for others interested in the organization. Meeting notices, meeting summaries, job notices, awards and announcements of new business openings should be included. The website can serve as the library for the newsletters and for important sponsored fact sheets, research, and links to social media initiatives and partner organizations including SC DHEC, the Department of Commerce and the Council on Competitiveness.

The website naturally will look at the organization's history, initiatives and meeting news. To be successful and interesting, the site must house the latest information on South Carolina's recycling and business innovation including

research opportunities and external research. Meeting dates, an industry directory, available or needed machinery, products or transportation, and a blog where members of the cluster as well as industry leaders may address South Carolina's strength as the ideal locale for recycling businesses might be included. Also, it may be worth developing a recycling story section where members can share their own recycling related stories, photos, films or other creative endeavors. The website also will collect and distribute recycling industry information via links to social media sources.

One of the questions that the cluster should address as the website content grows is where the website should be housed. Currently, it is housed on the New Carolina Competitiveness Cluster site. That site may serve the industry's needs in the near and long term but the capabilities should be explored so that the cluster can plan accordingly. Some of the other industry clusters have developed sites that grew out of the New Carolina site but now stand alone with two way direct links to the New Carolina site. In the case of the recycling cluster, the New Carolina link along with the RMDAC, SC Commerce and SC DHEC links are important.

Social Media

A few years ago, a website along with the more traditional forms of communication was sufficient for message distribution. Today, the media climate is filled with quickly evolving news stories and perpetual information. As countless media tools vie for South Carolinians' attention, the recycling industry also should consider delving into web based social media as a low cost way to communicate with a range of people. In turn, recipients are able to disseminate information among their peer groups. The sites can be managed so that recipients can share and even contribute content. Because of the interactive nature of social media, consistent and timely oversight and management of the sites are critical. The examples below are commonly used social media outlets.

On Facebook, users create a personal profile and subsequently connect with other users. While originally designed for personal use, Facebook has

developed into a viable way for organizations, businesses and institutions to disseminate information about their brand. Facebook has more than 400 million active users. With 50% of active Facebook users logging on to Facebook on any given day. People spend over 500 billion minutes per month on Facebook. (Facebook, Inc., 2010)

After creating a Facebook "profile" page, the recycling industry can disseminate information to their base of constituents. Users would become "friends" with the recycling industry and kept abreast of cluster happenings.

Twitter is a free microblogging service that enables members to send and read real-time 140-character messages known as "tweets." Because it can be widely distributed, Twitter allows users to distribute information to a wide-array of publics. The recycling industry could use twitter to educate various publics about recycling cluster events or policy stances and receive input in an up to the minute fashion. Users would "follow" the recycling industry and, upon finding information "tweeted" by the industry interesting, they can "retweet" that information to an entirely new set of "followers." In this manner, important information can be distributed quickly to groups who might not ordinarily seek out access to this information.

YouTube is the popular online video distribution platform that allows people to watch and share short originally created videos. One way to share information about the recycling industry in South Carolina is to videotape and post grand openings, news stories, and public service announcements or interviews.

There are many social media outlets and keeping them updated with consistency can be time consuming. Rather than updating individual social media sites, integration programs save time by allowing users to update several popular

social media outlets with one entry. HooteSuite is a type of integration program that is frequently used in low budget, minimally staffed settings. Different options for integration programs offer different levels of service and should be investigated.

Social Media Case Study

North Carolina's **RE3.org**. seems to have a successful social marketing campaign. The website links with the North Carolina Division of Pollution Prevention and Environmental Assistance, guiding citizens to sites where they may recycle various items. In addition, the RE3 website links to social media outlets including Facebook, Twitter, and YouTube where site visitors can view the initiative's efforts in real-time. Across these different platforms, RE3 delivers a consistent message "designed to encourage people to adopt recycling as part of their everyday behavior at home, work and on-the-go" (RE3, 2010). Their branding is consistent across all social media outlets. Resources and instructive information are located on each site.

Advocacy

Early on, it is important for the advisory board to assess the extent to which the organization will lobby for the industry. Advocacy should be ongoing - before, during, and after the legislative session.

To determine where the organization's focus and resources will be targeted, a process to collect membership's sentiments on advocacy issues should be developed. To determine membership's interests, consider e-mail or newsletter questionnaires or a facilitated session at the annual business forum.

From the input, consider:

1. How is the recycling industry affected by or linked to the issue?
2. Is there adequate factual information available on the issue?

3. Is the recycling industry generally in agreement on taking a stand on this issue?
4. Is another organization addressing this issue? If so, should the recycling industry collaborate on the advocacy effort?
5. Is this a high, medium or low priority issue? Is there urgency to the issue?
6. Are there members that are particularly knowledgeable and well spoken on a particular priority area?
7. What are the resources (staff, money, and time) needed and what are the resources available?

Process to Determine Advocacy Issues For the Upcoming Year

Based on the information provided above and the level of importance, likelihood of success, timeliness, and other factors, the recycling cluster board will determine what issues will be targeted for the upcoming year according to a designated process. A simplified process is outlined below.

1. Issues are presented to the board along with background information.
2. Board reviews the issue materials, implementation plans, timelines, and budgets.
3. Board chooses focus issue(s) for the upcoming year.
4. Each year, the board determines if the advocacy process is working and whether the process and the issues should be scrapped, revisited or revised.

Conducting the Advocacy Campaign

For each advocacy issue targeted, the following steps should be addressed.

1. What is the recycling industry's stance and message?

2. Are there similar campaigns being launched with partners or potential partners? How detailed is their platform. Are there still opportunities to have a say in the platform?
3. What strength will be gained by participation in advocacy on this issue?
4. How will the industry's involvement affect other South Carolina initiatives?
5. If the board determines this is worth taking on, given our resources, what is our plan for participation on the effort?

Where the organization decides to take on time sensitive issues, it will be important to be prepared to respond in an organized and professional manner but also in a timely manner. When it comes to what is newsworthy, groups are less likely to be noticed if a response comes too far after the initial article or announcement. The following steps can lay the groundwork for a timely and more successful campaign.

1. Be sure the organization is on related national, state and local alert lists.
2. Create a listserv of recycling industry members interested in receiving action alerts and advocacy updates.
3. Action Alert/Media Reponses
    a. Get the advocacy committee to respond to alerts within twenty-four hours with draft letter to editor, op-ed, or other informed communication.
    b. Write editorials and send out to board and other committee members for review and response within twenty-four hours. Papers are less likely to print a response if it comes too far after the initial article.

Advocacy Tactics

To assist in advocacy efforts, consider the following:

1. Determine who will be the official spokespersons and the backup spokespeople.
2. Be sure advocates are prepared to be effective with detailed information, training, support, and a mechanism for feedback on efforts underway.
3. Prepare anticipated question and answer fact sheets.

4. Prepare PowerPoint presentations on advocacy issues that can be delivered by a few different, geographically dispersed members. Promote that speakers are available to make this presentation to civic organizations.
5. Consider a Recycling Industry speakers' bureau to provide information on the topics.
6. Host webinars targeted to specific audiences
7. Collaborate with other existing South Carolina partners and other South Carolina organizations that have networks, insights, and research on pertinent topics. Partner on educational events for legislators and others with the goal of providing information on major issues facing community recycling.
8. Draft article(s) for newspapers or magazines focused on advocacy issue areas faced around the state.
9. Continue to host the legislative day to raise awareness of recycling issues and policy needs. Also, host community awareness events to highlight recycling needs and how the issues affect citizens.
10. Put together public forums that include policymakers and other recycling stakeholders.
11. Become a resource or expert for the decision makers and their staff members
12. Notify the recycling award winners' legislators so that they are aware of activities in their community but also so that they can issue a congratulatory letter to the recipient for doing terrific work.
13. Invite policymakers to write a column or interview policymakers for publication in the newsletter or on the website. The organization needs to know their perspectives but also their contributions will gain them exposure and potentially build an advocate for the organization.
14. Invite policymakers to attend the annual business forum. Host a simple reception the evening before the meeting so that policymakers can meet the outside speakers. The outside speakers might provide guidance on introducing policy related to recycling or in other policy related matters.
15. When leaders attend events, always acknowledge their presence.
16. Look for photo opportunities and post the photos.
17. Maintained e-mail, fax and mailing lists will be important for the organization. This information is valuable and policies should be

developed to manage the data and address distribution out of the organization.

18. Advocacy page on the recycling industry website. In addition to adding the advocacy issue talking points mentioned earlier, increase the website content. When a policymaker visits the website, it will be helpful for them to see the breadth of the recycling industry membership and programs. Potentially include materials and summaries from the meetings.

On this page,

A. List and describe current and upcoming national, state, and local issues. Include how these issues relate to the mission and efforts of the recycling industry.
B. Include talking points for general information and for inclusion in correspondence for members wanting to respond to alert.
C. Include listing or link to board contact information and US and state senate/house representatives.
D. Determine if there is an organization that provides a legislative action score or report card. If so, consider whether it is helpful to link to it.
E. Include lobbying rules and if applicable, diplomacy guidelines for members when they are speaking on behalf of the recycling industry.

Evaluation

In many cases, evaluation is considered after a project is launched and then tools are developed to accommodate the desired outcome. To guard against bias, it is important to determine the evaluation methods that will be used before the campaign is started. Whether time or money, there are costs to all suggestions. What information is helpful to gauge over time? Consider the number of people attending meetings, the number of requests for additional information, the number of people recycling, the number of new businesses, or requests for training. Consider and compare costs of services compared to benefits of these services.

Networks and Collaboration

The recycling industry's foundation is built on networks and collaborative efforts. Some of these networks are loosely structured; others are more formalized. It is important to seek out organizations for collaborative efforts that might not initially register as kindred spirits. Strengthening and expanding the recycling network by clearly defining benefits and reasons that participants should be engaged will be an ongoing, long term commitment of the recycling industry.

Goal:

South Carolina will have a comprehensive recycling industry network that provides compelling rationale for widespread industry connections and collaboration.

Tactics:

- **Facilitate partnerships with business in order to explore collaborative opportunity and to increase the value of recyclable material.**
- **Consider where sector gaps exist in the industry and actively recruit participation from businesses with complementary and needed skills/interests.**
- **Encourage regional, interagency and inter-jurisdictional cooperation and coordination in policy and business development.**
- **Collaborate with government agencies to identify potential financial resources or incentives for recycling.**
- **Create an institutional framework for the recycling industry that encourages and supports improved communication and partnering potential on comprehensive and specific needs and opportunities.**
- **A comprehensive supply/value chain analysis will yield potential collaborators for individual businesses and the cluster. The value chain is a valuable tool for discovering areas where complementary processes can be matched.** ***(See Chapter VI, Leverage Infrastructure.)***

The recycling industry can better identify valuable partnerships among various cohorts through the creation of an institutional framework that works among states and at the state, regional and local levels. At the

roundtable held in early 2010, recycling leaders identified groups with which the industry should build relationships.

Potential Partners Identified at Recycling Roundtable

Industry Partners	Community Partners	Government and Quasi-government Partners	Education Partners
•Distribution firms	•Real estate, construction and developement associations (Urban Land Institute	•SC Association of Counties	•Research Universities
•Transportation and logistics cluster and other clusters	•SC and local Chambers of Commerce	•Municipal Association of SC	•Colleges
•Export partners/ports	•Non-profits - community activist groups	•Economic Development Alliances	•Technical Colleges
•Communications industry	•Environemental groups (SC Conservation Voters, Upstate Forever, SC Coastal Conservation League, others	•Policymakers - local, state and federal	•K-12
•Retailers/Whole-salers	•CRA	•State agencies and professional associations	
•Industry Associations		•SWANA	
•Packageing Associations			
•SERDC			

Figure 19: Potential Recycling Industry Partners

For the purpose of business development, partnering with individual industries across the state in order to increase the volume of contributions of recyclable material to the production feedstock is an important aspect in South Carolina's emerging recycling market. Specific focus areas may include facilitating the industry/government dialogues and interchange, discussions with retail chains about market acceptance of their waste products and special partnerships like Coca-Cola in Spartanburg. When formed for the purpose of increasing recycling input streams, these partnerships and the cooperative environment offer South Carolina a competitive advantage in the recycling landscape.

Where sector gaps exist in the recycling industry, it is important to recruit participants with complementary skills/interests. South Carolina must make certain that all bases in the recycling process are covered so that it can be the

one-stop destination where our companies garner as much in and out of state material as possible and craft high levels of product from these recovered goods.

Encouraging interagency and inter-jurisdictional cooperation and coordination in governmental policy as a means toward business development can help to create an environment where future recycling businesses that locate within South Carolina have the potential to thrive. Existing businesses will also benefit from coordination by gaining knowledge of best practice techniques and experiencing greater ease of expansion across counties and municipalities. It is important, however, that local and regional recycling business requirements are available in a format accessible to all interested parties. The recycling industry also should work with neighboring states and across the Southeast region in order to ensure an increased and abundant feedstock within South Carolina's borders.

Collaborating with educational partners not only serves to keep South Carolina on the cutting edge of the recycling frontier, but also fosters a recycling culture for the future. By developing teaching, research and service programs in partnership with K-16, South Carolina can cultivate an ethos where recycling is no longer a "green" option but the right or only option. Cultivating this mindset begins with young schoolchildren and extends to the highest echelons of academia, thereby increasing appreciation of the recycling feedstock and the options to use this feedstock.

Initiatives to facilitate partnerships and collaborative work should be a top priority. The process of developing relationships takes time. It is important to begin these efforts early so that as opportunities surface, the awareness and trust levels will be in place.

Leverage Infrastructure

In this context, infrastructure refers to all of the components needed to run business operations including financing, administration, marketing, transportation and so on. By combining forces as a group of businesses, individual businesses and industry as a whole will benefit at a higher level.

South Carolina recycling businesses are varied in both size and focus. From an entrepreneurial standpoint, they have been successful and the recycling industry group wants to ensure that the cluster supports these already entrenched businesses through advocacy, technical assistance and marketing. The strength of the industry rests with these existing businesses but also on new recycling or recycling affiliated activity that South Carolina has not yet tapped. Tightly consolidated industry is waning in favor of industry focused on its core competencies and then outsourcing the work that can more efficiently be handled by other businesses. This spells opportunity for South Carolina's broad based recycling industry. Still, there are steps that need to be taken before South Carolina's recycling industry and affiliated businesses realize their full potential value and strength.

Goal:

South Carolina's recycling industry will leverage its assets to increase value and strength and overall competitive advantage to its individual business components and the industry as whole.

Tactics:

- **Identify and assess all elements in the recycling industry value chain in order to better understand and enhance the South Carolina's recycling industry competitive advantage.**
- **Identify in-state and regional businesses and business locations and proximity to materials processing facilities**.
- **Explore ways to cut down on transportation costs for the recycling industry by developing partnerships and collaborative projects with the Transportation and Logistics Cluster.**
- **Demonstrate economic and environmental benefits derived from regional markets.**

Value chain analysis examines the sequenced activities an organization performs and how the different components interact and contribute to long term and sustainable benefit. One of the advantages of the analysis is that business needs may be met with pooled resources or economies of scale that make a business proposition more affordable. Once independent activities now become interdependent providing opportunity for individual business and industry wide competitive advantage.

In the context of South Carolina's recycling industry, there are broad ranges of function, application and commodities. Participants come from large, small, urban or rural areas. They are processors, entrepreneurs, collectors, haulers, government officials and citizens. Pickup and delivery, material processing, identifying partnerships, increasing flow of recyclable material, and sustaining the system fall within the study of this large and seemingly complex value chain. The obvious linkages within the system are important but there are other potential linkages that while important, may be too subtle to be easily recognized. A thorough assessment of the industry value chain will facilitate understanding and clarity within the industry as a whole but also among its different component parts.

Within the breadth of the recycling industry, there are linkages with the value chains of other industry clusters. The logistics and transportation cluster is a prime example. Taking a look at other industry clusters will be an initial, systematic way to identify the voids and potential markets that exist for the recycling industry. This initial study would be a component of the large value chain study specific to the recycling industry and its component parts. The unique strengths of the industry and of South Carolina also should be highlighted because of their distinct characteristics.

South Carolina has a strong database of recycling industries and their products. Affiliated industries should be included and any attempts to bolster this information system should be supported. There are ongoing efforts by the South Carolina Department of Commerce to identify industry needs for recovered materials and industry potential for conversion to recycled feedstock. Where appropriate, this data should be shared among potential feedstock providers.

Reviewing South Carolina's recycling industry within the regional context is important to its success. Consider the Wal-Marts, Sonoco and any transportation or logistics business. Regional planning and activity across these jurisdictional boundaries makes sense in general terms but even more so in the recycling industry because of the breadth of the industry. Exploring the creation of regional recycling distribution and processing centers and hub and spoke models in conjunction with the transportation and logistics cluster will be pursued. South Carolina's ports, interstates 26, 20, 95 ,77, and 85 and other locations near major population centers (Greenville, Columbia, Charleston, Atlanta and Charlotte) offer possibilities to conserve valuable time normally spent on hauling and collection in other parts of the country. Export markets and even out of state waste also should be assessed to determine opportunities for business growth and increased feedstock. While the more remote outlets should be considered for possible advantage, the linkages with local or regional partners should be the initial focus area because of the logistical considerations and the potential for dollars and jobs either in or close to South Carolina.

Interlinked value-adding activities that convert inputs into outputs, and, in turn, add to the bottom line, help to create competitive advantage. A value chain typically consists of inbound distribution or logistics, manufacturing operations, outbound distribution or logistics, marketing and selling, and after-sales service. These activities are supported by purchasing or procurement, research and development, human resource development, and corporate infrastructure. Figure 20 begins to layout the components of a recycling value chain analysis. Each one of the entries requires its own analysis with an assigned value (high, medium, low), business and resource listings and location, and in and out of state linkages. For a current listing of suppliers by commodity provided by the Department of Commerce, see Appendix K.

To realize the industry's potential, growth in the value chain is necessary and thoroughly assessing the components will allow prospective or growing businesses to consider where there are unmet needs. Gaps in the process will become evident in the analysis thereby allowing opportunities to refine processes, improve quality and add efficiencies. Ultimately, the plan is to coordinate the value of individual businesses so that the effect of the cluster, as a whole, is enhanced.

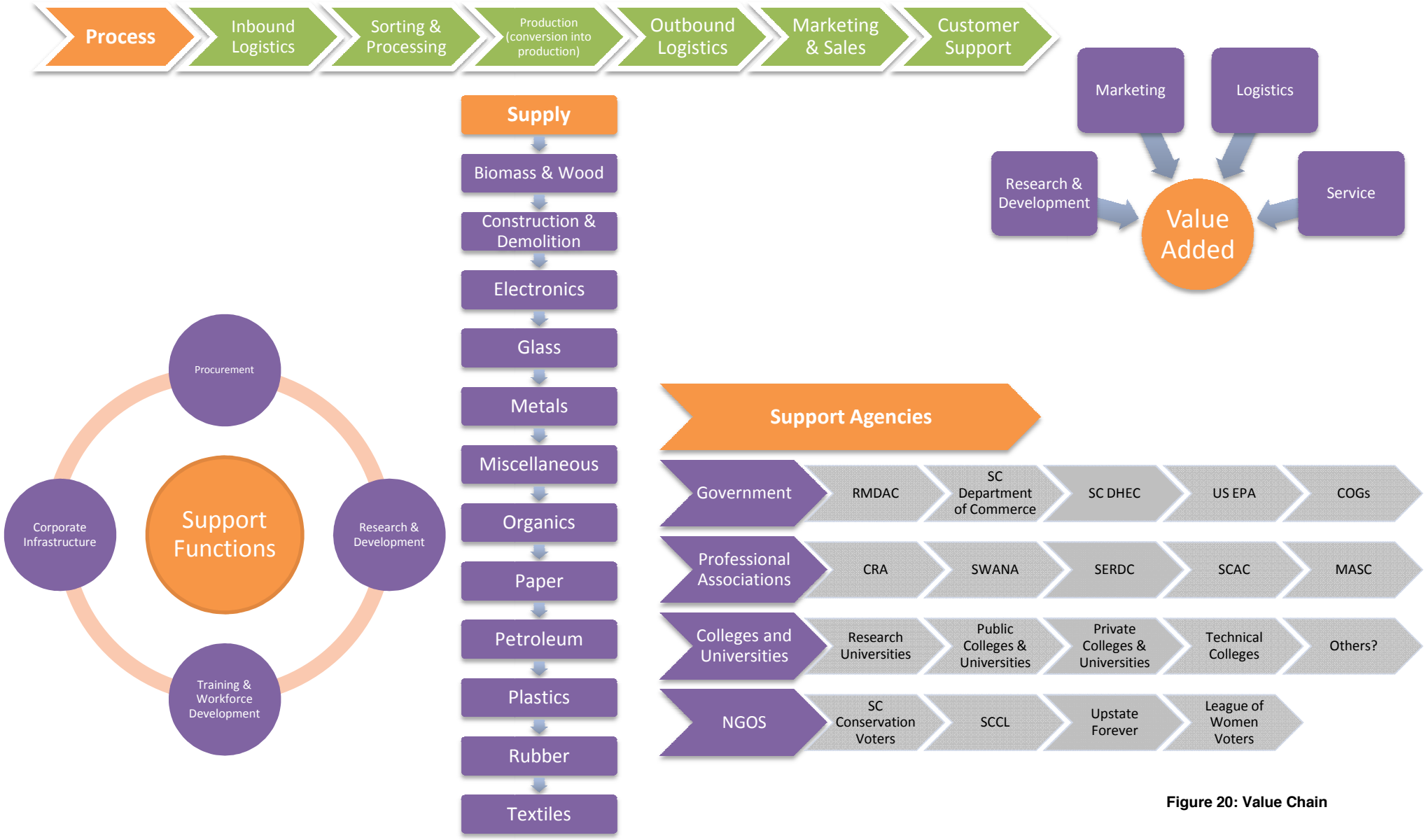


Figure 20: Value Chain

Resources:

SC Textile Connect:
http://www.sctextileconnect.com/value_chain.cfm

NC Textile Connect:
http://www.nctextileconnect.com/value_chain.cfm

NC in the Global Economy (click on a particular industry at the top of page and then value chain on the left side)
http://www.soc.duke.edu/NC_GlobalEconomy/furniture/overview.shtml

Global Value Chains
http://www.globalvaluechains.org/concepts.html

Nuclear Energy Institute Supply Chain Map
http://www.nei.org/resourcesandstats/documentlibrary/newplants/brochures/supply-chain-map

Business Development and Recruitment

The recycling industry group's success as a cluster is dependent on expanding South Carolina's network of recycling related activity and on expanding and increasing material feedstock. Crucial to the process is the ability to develop viable ways of gaining access to new or potential business partners, providing accurate information and raising awareness of the benefits of participation in recycling activities. In addition to marketing, service and economies of scale, business growth means increased recovered material.

The cluster's first priority must be the growth of recycling businesses. For expansion to occur, general manufacturing must either grow or transition in ways that employ the use of more recovered goods throughout the manufacturing industry. There are state level industrial recruiters that assist potential businesses with information on property availability and siting information, existing input streams and logistics resources. The recycling industry will continue to work with the South Carolina Commerce Department and economic development alliances to share information that can bolster recruiting efforts particularly if it means increased recovered feedstock. This ongoing process might entail traditional communication tactics including a brochure or fact palm card, sharing recycling newsletters, perhaps meeting with recruiters to let them know of the recycling industry's strength and partnership interests, and articles and notices in trade newsletters and local papers.

Initially, the recycling industry will focus on the obvious. Working with companies already located in South Carolina, the group will encourage recycling of those things that make the most sense to their companies and the industry. In addition, the fact that the state imports waste from other states will be assessed for potential opportunities where the waste stream can be intersected and materials could be recovered. With proper mechanisms in place, increasing the waste stream could increase the size of South Carolina's recovered commodity market share and meet the recyclable material demand.

Goal:

Build a critical mass of sustainable recycling related businesses in South Carolina

Tactics:

- **Initiate discussions and information exchange that supports new business recruitment particularly where new or increased feedstock is anticipated.**
- **Support exiting businesses and obvious linkages with feedstock suppliers.**
- **Review and assess data collection activities and work to ensure that business activity is reported to its fullest extent.**
- **Support value chain analysis efforts in order to understand South Carolina's waste streams, feedstock needs, gaps and where there are particular competitive advantages.**
- **Assist Commerce Department as needed to assess recycling workforce needs and assist schools with training programs that support enhanced or new job skills.**

Business Services

One of the integral recycling industry assets is the South Carolina Department of Commerce's Business Services program. Business Services works within numerous networks of resources and partners to connect business needs with available resources. Some of the networks include S.C. Business One Stop, ECI-Find New Markets that assists businesses with export, market research and marketing solutions; the U.S. Commercial Service of the U.S. Department of Commerce that assists with international trade and export development; the S.C. Technical College System and S.C.'s Small Business Development Centers that assist small businesses with startup and business development resources. In addition, Business Services has developed a Small Business and Entrepreneurship Resource Guide that lists many financial, operational and overall business needs resources for new and existing business.

Business Services operates a comprehensive company contact program with South Carolina's existing business and industry to better understand and address company needs and to cross-sell Commerce and other state resources. These resources include recycling market development, existing business and entrepreneurial support, export development, and BuySC (a supply chain service). The Business Services Small Business Ombudsman's Office assists individuals with company start-ups, small businesses with their concerns, and helping them grow to the next level.

In addition, Business Services coordinates through the Global Business Development division to connect the recycling industry with companies new to South Carolina, or with those companies expanding in the state. These Commerce visits and connections open doors for integrating recycling into everyday business operations. For the recycling cluster, this adds the potential for a more active business environment and for increased feedstock.

Resources:
SC Department of Commerce, Business Services
http://sccommerce.com/business-services

Supply Chain

An up to date supply chain database helps processors and manufacturers know where current and potential feedstock opportunity is located. The identification, clarification, and connecting of variables of supply, movement, and processing are valuable resources and can be a calling card for the recycling industry group and their desire to partner with other businesses. Taken further, the supply chain will fit into the value chain outlined in the *Leverage Infrastructure* section. The value chain is an assessment that connects recycling industries and affiliated businesses so they can benefit from collaborative efforts. *(See Chapter VI. Leverage Infrastructure for more detail.)*

Online Directory/Database/Research Portal

The Commerce *Recycling Directory* provides essential links between businesses, industries and local governments searching for recyclable markets and companies that need these materials for processing and reuse. The *Directory* provides businesses the opportunity to market and increase awareness of its services and/or products. To augment these efforts, a user friendly, on-line data management system should be developed that includes an enhanced business database, research, and information on ongoing state recycling activities. To increase the long-term capabilities of the database, collection questions should be assessed to determine if there are ways to increase the value of the data. Here, the recycling industry group will be kept abreast of important state recycling initiatives, and, where appropriate, have access to priority information only available to the recycling membership. This source of information would provide a one-stop shop for up to date, state of the art recycling information and would

also provide access to information about small quantity or niche feedstock that may be valuable if combined with small stocks available from other collectors.

Resources*:*
SC Recycling Directory
http://maps.sccommerce.com/resource/recyclingdirectory.aspx

Stream Input

The recycling industry cluster will support SC Department of Commerce's efforts to recruit industries to South Carolina that will provide a sustainable market for the recycling industry. More in-state business activity will facilitate a closed loop system where products can be integrated into the larger value chain, monitored throughout their life cycle and valuable dollars remain in SC.

SC DHEC and SC Commerce partner on the Smart Business Recycling Program. This program provides free, confidential, non-regulatory technical assistance on recycling, waste reduction, beneficial reuse and other ways for businesses to conserve resources and improve their bottom line. The program offers site visits, waste assessments, market assistance, educational materials, staff training and other services. This program is important to the growth of recycled feedstock and the industry group as a whole.

Resources*:*
SC Smart Business Recycling
http://sccommerce.com/business-services/recycling-market-development
http://www.scdhec.gov/environment/lwm/recycle/smart_business/

Training

The industry will assist the SC Department of Commerce, technical schools and other job training entities to identify and assess long-term industry workforce and training needs. On the job training programs and associates and technical degree programs will be a major component of the training, but training also must be broad-based and tap all educational levels including graduate and bachelor's degrees in the areas of engineering, science, chemistry, business and policy.

Economic Impact Study

The last economic impact study was prepared in 2006 and based on 2005 data. *(See Chapter IV. Economic Impact of Recycling.)* This study brought to light the importance of the industry on the South Carolina economy. Market conditions have changed since that time. To reflect changes in the tax structures, commodity markets, the economy, and general circumstances, this information should be regularly updated. Industry considering a move to South Carolina will want to know the industry outlook and where they might fit into the picture. Capital investment and granting organizations look at study findings to assess the long-term benefit of their potential investments. Updated economic information can make a difference in whether industry decides to land in South Carolina or another state where more of the pieces of information might be in place. From a marketing standpoint, the study numbers must reflect the most current data available. Along these lines, as data bases are upgraded or developed, if industries and data suppliers can include NAISC or SIC codes by individual business, it will be easier to keep the impact numbers up to date.

Incentives

South Carolina already offers some attractive incentives to business including various forms of real and personal property tax relief, incentives for employing recipients of Aid to Families with Dependent Children, favorable financing alternatives and employee retraining assistance. In a recent initiative, Governor Mark Sanford signed an economic development incentives bill that includes a variety of broad range incentives. Included in the legislation is the ability to lower the property tax during recruitment negotiations from 10.5% to 7% on manufacturing warehouses. An equipment tax credit has been expanded to all areas of the state. The Commerce Department now has control of $7.5 million dollars dedicated to the Endowed Chair program and tax credits are available on alternative energy construction and equipment investments. *(See Chapter IV. Doing Business in South Carolina.)* While these incentives are not specifically targeted to the recycling industry, they are beneficial to the business environment.

The recycling industry supports the development of incentives that will increase the supply of recovered material feedstock available to South Carolina manufacturers. In 2011, RMDAC intends to study and pursue a holistic incentive program that includes among other policy decisions, a tax incentive for recycling business development and recruitment. (*See Chapter VI. Policy*)

Economic incentive packages that balance the needs of businesses and the surrounding community can go a long way in building relationships. There are a number of considerations that governments and businesses will weigh in making their location decisions. First, governments seek to provide a palette upon which business can thrive. A positive business environment, safe and adequate infrastructure, quality education, a healthy environment, fair practices and general quality of life are components of this foundation. On top of this foundation and to increase competitiveness, governments may provide incentives to businesses that will provide particular advantages to the community or to the state in the form of well paying jobs or the potential for spin off businesses. Incentives may come in the form of tax credits for investments in building construction, equipment purchases, energy initiatives or job development. Incentives also may come in the form of worker training, reduced fees for a period of time or infrastructure investments. To be successful, incentives should be finely tailored to the specific needs of the community and the business.

Waste Characterization Study

Each year, South Carolina DHEC and RMDAC analyze the solid waste recycling numbers to identify growth opportunities for the recycling industry. In 2009, RMDAC reported that electronics, carpet, construction and demolition, waste tires, fiberglass and organic waste should be promoted as recyclable commodities where markets are emerging.

Under the adage that “to manage, we should measure”, some states perform waste characterization studies to better understand the composition of their waste and the potential for the recycling of that material instead. Reviewing these studies is instructive to understand the variables involved and how this information might be helpful to the recycling industry. Priority materials, what recycled feedstock is in highest demand, what primary materials could convert to recycled feedstock, and new recycling businesses that might choose a location

based on feedstock availability are frequent considerations in this type of study. Officials report that Georgia's study, conducted a few years back, cost in the neighborhood of $400,000. Estimates for South Carolina, in that same time frame, started in the $300,000 range. In the near term, given the potential costs of a full fledge waste characterization study and the current and projected budget situation, an initial step for South Carolina would be to focus on accurate and consistent local government reporting and to investigate ways to ensure that business is reporting waste activities in a standard and consistent format as well. At a later date, the costs and relative benefits of a waste characterization study should be considered.

Case Studies:

Minnesota Waste Characterization Study – http://www.pca.state.mn.us/index.php/waste/waste-and-cleanup/waste-management/solid-waste/integrated-solid-waste-management/minnesota-msw-composition-study.html

Georgia Waste Characterization – http://www.dca.state.ga.us/development/EnvironmentalManagement/publications/GeorgiaMSWCharacterizationStudy.pdf

The *Georgia Waste Characterization Study* and the recycling market activity stimulated the state's commitment to encourage increased local government recycling rates. Georgia has funded a series of regional recycling collection hubs to facilitate the conversion to single stream collection operations.

Research and Education

For South Carolina's recycling industry to prosper, recycling knowledge and technology must remain on the cutting edge. While there are many avenues to these objectives, for the most part, the industry is focused on activities at the university, college and technical college levels.

Education and research have tremendous influence on the future growth of South Carolina's economy particularly as they relate to the state's ability to develop and apply new technologies. One of the issues in innovation is that we cannot predict which technologies will add the most to future knowledge or to the state's well-being. For instance, when Alexander Graham Bell invented the telephone, he initially viewed it as an enhanced method of transmitting messages, simply an improvement over the telegraph machine. At that point, his offer to sell the patent to Western Union for $100,000 was denied. Obviously, invention comes with uncertainty and risk. Whether successful or not, a research environment that recognizes the value of adding to the body of knowledge is important to the design of new processes and products. Technological change has and will continue to take us in uncharted territory and these shifts in structure naturally bring on temporary unease. The recycling industry recognizes that investment in knowledge, ideas, processes and equipment can ease adaptation to change and invigorate the recycling economy.

Goal:

South Carolina will be on the cutting edge in recycling knowledge and technology and economic enterprise.

Tactics:

- **Advance knowledge in the recycling field and its transition into economic value.**
- **Develop academic partnerships among universities, research institutions, industry, governmental agencies and non-profits to build a collaborative research infrastructure.**
- **Based on stated industry needs, pilot demonstration and signature research projects will be developed.**

- **Explore, pursue and secure private, non-profit and government funding sources that target research and higher education.**
- **Review the industry focus areas and determine where there are additional needs where universities may serve as resources. A few examples include data collection by student classes, public service activity programs or training capabilities.**
- **Promote the research and technology capabilities in South Carolina.**
- **Partner with other training and education providers to develop age appropriate curriculum modules for K-16 that relate to personal recycling behavior and the connection to recycling's economic impact and job development potential.**

A collaborative research infrastructure among universities, research institutions, industry, governmental agencies and non-profits is important to the well-being of the recycling industry. As a start, the industry should support efforts to investigate and better understand university research capabilities and determine how the research abilities align with industry needs. From a technical standpoint, science and engineering initiatives to discover new recycling products or processes benefit the recycling industry and promote South Carolina as a recycling leader. The Asphalt Rubber Technology Service (ARTS,) a rubber tire to asphalt research initiative between Commerce, SC DHEC and Clemson University, has been successful in advancing recycling research. In the long term, this model and its funding mechanism might be appropriate for other endeavors and other materials. The idea should be explored in earnest for priority industry and government research needs.

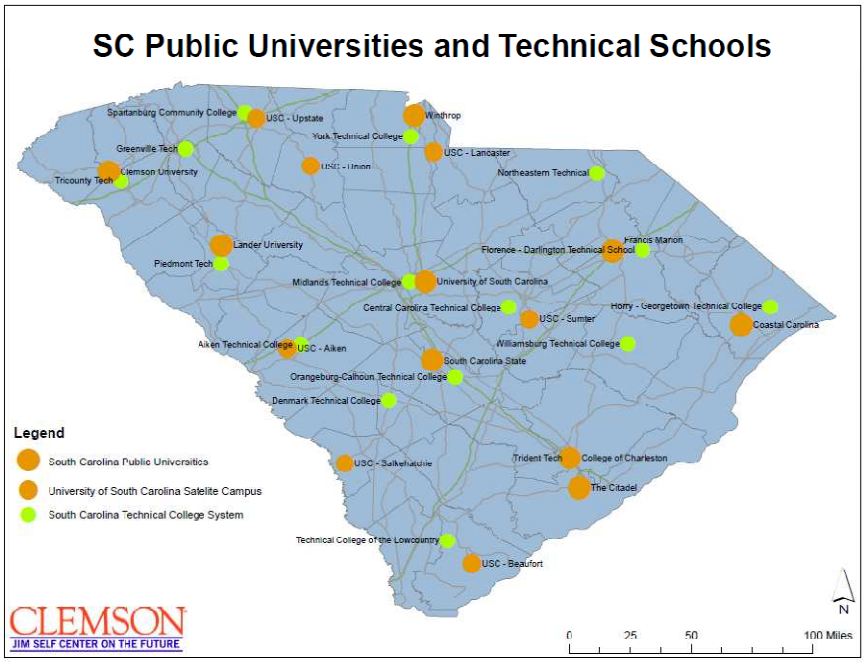


Figure 21: South Carolina Education

Applied policy research at the university level also offers opportunities for the recycling industry. For example, it is important to know the technical aspects of recycling's role and potential in carbon reduction strategies. From a policy standpoint, a methodology that includes recycling in the carbon equation and credit consideration also potentially benefits the industry and the environment.

The Commerce Business Services staff already has completed a survey of university course offerings that specifically state a sustainability component. This information changes annually so it needs to be updated periodically and include technical school offerings. In addition, from the industry perspective, it should include an inventory of university research that is being conducted in order to establish the links between industry needs and compatible research abilities. While an on-line investigation can provide preliminary information, face to face discussions at the research vice president or dean level may provide more accurate and university wide information. In 2011, RMDAC is planning a series of higher education forums that include industry and academia in order to facilitate these relationships and provide a setting for discussions on curriculum and research.

One of the issues mentioned at the Business Roundtable was related to research and how it is funded. Individual businesses have research needs that are applicable to the entire industry. At this point, there is not a structure for collaborative research funding that supports industry wide needs. *Who should pay?* is one of the questions frequently posed by recycling leaders. Some of the projects require more resources than any one industry can support and university research programs, in general, are sponsored by outside funding. The industry and the partners should explore potential research funding sources that benefit the industry and its environs. Also, an industry sponsored but university based advisory group could identify and coordinate an approach for potential research grants for industry technical and demonstration needs. This on-going group also would consider academic research fellowships.

Universities' public service responsibilities are to enhance the economic prosperity of citizens through discovery and transfer of gained knowledge. Through public service activities, applied research findings help constituents understand complex findings and how the findings translate into economic development or practices that are more efficient. There are a number of ways

that these resources can contribute to community wellbeing. In terms of training, higher education should be approached to determine where resources are available or needed that apply to existing and new workforce development. In addition, many higher education facilities are equipped for distance education. Currently, the Commerce Department, SC DHEC and the professional recycling associations conduct training of different degrees including conferences, written materials and webinars. These efforts are quite successful. As opportunities surface, industry officials may want to explore teaching and training collaborations with college and university faculty.

In order for South Carolina to emerge as a national recycling leader, it is essential to provide opportunities for students to become involved in recycling research and recycling public service projects that both benefit the industry and provide meaningful experiences for students. Such experiences bring about long-term commitment from students who recognize the industry potential and the benefits of working in the industry. Experiences for students can be cultivated through:

- Discussions with higher education officials that consider opportunities for 'recycling' business internships in policy, administrative or research areas;

- An examination of recycling related work-study opportunities;

- Development of long term database projects that involve data collection by students;

- Development of modeling capabilities that monitor recycling industry activity, and predict changes, response options and costs so that students are aware of industry capabilities;

- South Carolina's "Pathways to Success" is sponsored by the South Carolina Department of Education, the South Carolina Technical College system and the South Carolina Commission on Higher Education. The program provides education and career resources that are supportive of the state's economic development priorities. The industry should explore the program's status and relevance to the recycling industry and if compatible, develop an action plan for collaboration.

Policy

Many factors contribute to a successful recycling economy including consistent, fact based legislation. Strategically implemented, well conceived policies can go a long way in defining South Carolina as the respected place to open shop. As far back as two decades ago, South Carolina implemented legislation related to the disposal of tires, large appliances, batteries and used oil. Now there are advance disposal fees on these items, part of which goes towards research and education. Consumers now expect these fees and the recycling outcomes of these measures have been environmentally and economically positive.

During the 2010 legislative session, South Carolina legislators passed an electronic waste (e-waste) bill that requires manufacturer responsibility for the recovery and recycling of televisions, printers, and computers because of their environmental impacts and their economic benefit. During this session, there was a push for the required recycling of alcoholic beverage containers sold for on-premise consumption. While the bill was discussed, it was tabled for the 2010 session.

Obviously, there is interest in increasing South Carolina's recycling rates and funding initiatives that support recycling but with the state budget and national economic crises, major expenditures are heavily weighed and unlikely in the near term. Looking at the long term waste management picture, the foundation needs to be set now for the upcoming decade from the perspective of rising costs for waste disposal but also because of the significant opportunities to grow jobs and the state economy. It will take a strategic outlook and leadership, but with the collaborative efforts of federal, state and local policymakers, regulators, industry and citizens, South Carolina's sustainability quotient is much stronger.

Goal

The recycling industry group will facilitate strategic policy decisions that foster a sustainable and prosperous recycling economy.

Tactics

- **Advocate for consistent and mandatory reporting of data that includes internally and externally generated recovered and landfilled material.**
- **Support transparency in accounting and fee structures.**
- **Investigate landfill costs and subsidies and tipping fees to determine if and where there are imbalances and corrections needed in fee structures.**
- **Review landfill bans on designated materials where there is market value**
- **Where feasible, promote mandated recycling with a composting component.**
- **Advance the case for mandated recycling of alcohol beverage containers.**
- **Assess need for and encourage advanced disposal fee (ADF) where need exists.**
- **Encourage Producer Responsibility.**
- **Encourage local government adoption of Pay As You Throw and industry/government/citizen initiatives that reward or incentivize recycling.**
- **Review model financial incentive programs that support recycling and materials recovery and determine need for additional financial incentives in South Carolina.**
- **Work with SC DHEC and other stakeholders by providing recommendations related to the South Carolina Solid Waste Policy and Management Act and the update of the state's Solid Waste Management Plan.**
- **Review the state's 35% recycling goal and assess its progress and rationale in light of advanced technology and feedstock need.**
- **Build coalitions with policymakers at the federal, state and local levels.**
- **Support policies and initiatives that take a holistic, rather than a piecemeal approach, to a competitive business environment.**

Reporting

In order to bolster the South Carolina's recycling economy, accurate and consistent solid waste data is important to understanding the recycling industry's challenges and opportunities, meeting the state's recycling goals, and recruiting business. By law, South Carolina's municipal solid waste (MSW) and total solid waste (TSW) are measured. Unfortunately, there is no one country-wide universal definition for the terms so, for now, across-state comparisons are not

obvious. South Carolina has adopted the EPA definition of MSW as the combined residential, commercial, institutional/non-profit and industrial packaging/office waste generated. Typical household/office waste is included in the definition. Industrial waste and by-products, construction and demolition debris, automobiles, agriculture and mining wastes, sludge and hazardous waste are not considered MSW. TSW is MSW plus construction and demolition debris, manufactured waste and all other materials that are recycled.

Notably, South Carolina's recycling rate has decreased over the last couple of years. The diminished purchasing power brought on by the economic downturn affects the amount of purchases and ultimately packaging that is recycled. It also has an impact on the amount of advanced recycling fees collected, particularly on tires and large appliances. Still, one of the long standing issues voiced among recycling officials and related to the recycling rate is that of reporting inconsistencies. Within South Carolina, inconsistent reporting may be due in part to the challenging economic times coupled with state policy changes in taxes and funding that have reduced local governments' ability to offer the same service level at the same rate. Fortunately, for the most part, South Carolina communities have maintained their recycling programs. With budget cutbacks, recycling coordinator functions may be diluted due to necessities of combining job functions to meet shortfalls. Reduced oversight in recycling advancement and reporting are a few of the potential outfalls of budget cutbacks. SC DHEC has subscribed to Re-TRAC, a web-based data collection, management, analysis, and reporting system to assist in legislatively required data collection and report preparation. In combination with training, procedure development and implementation policies, the state's local governments will be able to report in a more uniform and useful manner.

Because of its 35 to 45% impact on the waste stream, the other side of the equation that needs shoring up is reporting by businesses. As it stands, business reporting is voluntary and the reported numbers vary widely from year to year. From a business perspective, without the full and accurate data picture, it is difficult to plan for workforce needs, financial resources and business recruitment and development. Biz-TRAC is an on-line reporting system that makes it easier for businesses to report. These data systems likely will lead to more accurate and consistent reporting. It was recently reported that Florida is deliberating required

business reporting. The cluster should periodically check the status of that endeavor.

Accounting Transparency

The topic that continually surfaces in recycling discussions is the cost comparison over time between recycling versus landfilling and who is paying for what service. Many service providers combine the fees and in some cases, costs are subsidized so that consumers do not know the true costs over time. The variables to be considered are broad including transportation, costs of disposal and recycling, labor, operations, capital and land costs and the revenue generated from recyclable sales. Long and short term planning for the provision of solid waste management requires transparency in the accounting plan. Understanding and public recognition of these factors can influence recycling behavior.

Costs

Tipping (also known as service or disposal) fees are levied on the unloading or dumping of waste at landfills. Generally, fees are imposed on a cost per ton rate. Applying only to nonrecycled waste, higher tipping fees can provide an incentive to recycle.

In South Carolina, fees are collected and managed by the accepting facility and their governing bodies or boards. Public and private entities charge tipping fees. While tipping fees have not consistently been reported, SC DHEC estimated an average tipping fee of $35 per ton in 2009.

In 2009, H. 3517 was introduced in the South Carolina legislature calling for a statewide tipping fee of $5 with the funds targeted to the Solid Waste Management Trust Fund. It was referred to the Committee on Agriculture, Natural Resources and Environmental Affairs and did not resurface during the legislative session. South Carolina's recyclers generally are supportive of a statewide tipping fee in order to provide a sustainable foundation for local government programs and statewide initiatives such as research and grants. If a statewide fee were enacted, recyclers are vocal that proceeds from the fee should be targeted to material recovery and waste reduction and not to the state's general fund. In fact, there are suggestions that fees for market development

should be allocated to an industry group responsible for administering grant and research funds. While under Canadian law, Waste Diversion Ontario is an interesting example that may be worthy of further review. It is a non-governmental organization whose primary concern is developing, implementing and operating waste diversion programs for designated waste streams. This residential recycling program is funded 50% by municipalities and 50% by brand owners of consumer packaging wastes. In addition, there is an option for brand owners to join "Stewardship Ontario" to divert their financial obligations to waste diversion programs.

Select State Imposed Tipping Fees

State	*Fee*	*Grants*	*Research*	*Education*	*Local Governments*	*Cleanup*	*Admin*	*Est. Income (million)*
AL	$1.00/ton	*X*		*X*	*X*	*X*	*X*	*$7.6 (07)*
GA	$1.00/ton			*X*	*X*		*X*	
IL	$2.00/ton	*X*			*X*			*$56 (06)*
IN	.50/ton							
KY	$1.75/ton	*X*		*X*		*X*		
MI	$.21/ton	*X*		*X*	*X*			*$4 (07)*
MN	$6.66/ton	*X*			*X*		*X*	*$58.5 (01)**
NC	$2.00/ton	*X*		*X*	*X*	*X*		*$24 (08)*
NE	$1.25/ton	*X*					*X*	*$1.6 (07)*
NJ	$3.00/ton	*X*		*X*	*X*		*X*	*$34 (08)*
OH	$4.75/ton			*X*		*X*	*X*	
PA	$7.25/ton	*X*	*X*		*X*		*X*	*$56*
TN	.75/ton	*X*						
WI	$13.00/ ton	*X*			*X*		*X*	*$63 - 69 (10-11)*

*Solid Waste Management Tax & Metro Solid Waste Fee Combined

Table 3: State Disposal Fees

Across the country, disposal fees have been imposed on landfill waste. (*See Table 3*) In some cases, the fee was intended to cut back on out of state waste. Generally, these attempts have been overturned by the courts due to assaults on interstate commerce laws. In terms of out of state wastes, in fact, some recyclers suggest an opportunity in imported garbage if recoverable and marketable items are part of the mix. As disposal fees are explored, the composition of imported waste should be explored as well.

Number of Municipal Solid Waste Landfills, and Average Landfill Tip Fee

State	***Number of MSW Landfills***	***Average Landfill Tip Fee ($/ton)***
Alaska	300	_
Arizona	40	_
Arkansas	62	_
Connecticut	2	_
Delaware	3	58.90
Florida	50	40.36
Georgia	56	_
Illinois	49	_
Indiana	35	29.57
Iowa	59	39.00
Kansas	52	_
Kentucky	34	29.21.00
Louisiana	27	32.35.00
Maine	12	35-85.00
Maryland	22	52.00
Massachusetts	18	79.00
Michigan	50	_
Minnesota	21	40.00
Mississippi	17	28.00
Missouri	21	_
Montana	79	25.00
Nebraska	23	_
New Hampshire	9	_
New Jersey	12	72.00
New Mexico	33	28.00
New York	27	56.00
North Carolina	40	35.00
North Dakota	14	31.3.00
Ohio	42	32.00
Oklahoma	38	15-22.00
Oregon	33	35.00
Pennsylvania	48	_
Rhode Island	2	45.31
South Carolina	***18***	***36.00***
South Dakota	15	35.00
Tennessee	34	28.00
Texas	215	25.70
Utah	34	_
Vermont	4	96.00
Virginia	60	_
Washington	16	45.30
West Virginia	19	45.18
Wisconsin	35	37.00
Wyoming	51	30-80.00
Total	***1,831***	***42.08***

1 Alabama, California, Colorado, Hawaii, Idaho, and Nevada did not provide information on these fields "-" = no reported data
The State of Garbage in America BioCycle
December 2008, Vol. 49, No. 12, p. 22

Table 4: Number of Solid Waste Landfills and Average Landfill Tip Fee (including private enterprise) 2006

Bans

Bans are the most direct approach to waste reduction and can be successful when adopted as part of a comprehensive waste management strategy. Like many other states, in conjunction with assessing advanced disposal fees or producer responsibility policies, South Carolina has legislatively imposed Class 3 landfill bans on specific items including vehicle batteries, tires, large appliances, motor oil and yard waste. For the most part, these bans address some noxious and longstanding disposal issues. Still, some states are realizing the value of landfill bans on certain high value, high marketable materials, that currently are not fully realized in South Carolina's marketplace. (*See Table 5.)*

From some recyclers' perspective, any waste that can be marketed should be banned from landfills. There are other recyclers who suggest that if there are investments in place to accommodate recovered material, bans may reduce industry feedstock and instead, education and other mechanisms are in order to redirect material flow to recycling facilities. Other advocates suggest that all recycling waste should be banned from landfills rather than focusing on specific material bans. The idea is that in sufficient quantity, untapped markets will emerge. Widespread bans require a thorough understanding and assessment of the waste stream and the infrastructure investments necessary to accommodate a shift from waste disposal to processing and distribution of recovered goods.

State	Disposal Bans For Marketable Materials
Massachusetts	Glass, metal and plastic containers and recycled paper; Asphalt paving, brick concrete, metal and wood were banned from disposal in July 2006
Michigan	Beverage containers
New Jersey	All other recyclable materials that any local government designates as a recyclable material
North Carolina	Aluminum cans banned since 1994; beginning in 2009, wood pallets plastic bottles and oil filters will be banned; Beginning in 2012, computers will no longer be accepted for disposal
Rhode Island	Recyclable paper and containers
Wisconsin	Recyclable paper and containers

Table 5: State Disposal Bans

Mandates

Within the structure of a comprehensive solid waste plan, mandated recycling increases collection, consistent feedstock and industry growth. Mandated recycling, however, faces challenges due to lack of knowledge about the full and subsidized costs of disposal. Without full cost disclosure, landfilling may seem inexpensive. If full costs were obvious and communities recovered more recyclable material, economies of scale likely would allow those material markets to grow, thereby changing the paradigm of cost imbalance.

At the state level, recycling mandates generally address specific products or the requirement for local government or business source reduction plans. In the past, mandated recycling of specific items was based on health or environmental reasons. Now, while environmental factors and concerns about permitting additional landfill space are still addressed, mandated recycling is sometimes based on the value of commodities and the additional benefit of recycling on the economy. For instance, New York City put recycling to the test when it stopped its mandated recycling of glass and plastic because of collection, transportation and processing costs. The $39 million savings anticipated by cutting out the program instead went to cover the costs to landfill the material. The City reinstated the recycling mandate along with transportation and technological improvements proving that recycling can save money and landfill space.

Recognizing the importance of a state authority and responsibility for long term solid waste planning, some states have enacted legislation requiring municipal recycling programs. State mandates on local governments generally require that they submit and abide by their individual waste reduction plans. Table 6 shows a sampling of states that require municipalities to implement recycling plans.

State Legislation Requiring Mandatory Municipal Recycling	
State	**Municipalities Involved**
Connecticut	All
New Jersey	All
New York	All
Pennsylvania	Population of 5000 or Greater*
Rhode Island	All
West Virginia	Population 10,000 or greater

Table 6: Mandatory Municipal Recycling

Delaware implemented mandatory recycling of plastic bags. It requires stores with more than 7,000 square feet of retail space or with at least three Delaware locations to implement an in-store plastic bag recycling program.

From the input sessions, South Carolina industry officials were in general agreement that there should be mandated curbside recycling with a composting component, where logistically and financially feasible. Of course, there are density and financial factors to consider with mandated curbside recycling. At a minimum, efforts to increase residential access to recycling should be targeted. Given the importance of residential recycling to the industry feedstock, where appropriate, industry officials will support these efforts. According to South Carolina DHEC, in 2009, 72% of South Carolina households did not have curbside recycling. In the near term, DHEC is exploring ways to partner with local governments to provide easier access to recycling facilities by residents without curbside recycling.

Regarding the composting component of the recommendation, tons of food wastes are landfilled every year. Where food cannot be donated, there are opportunities to compost the material for soil amendment purposes but also to decrease refuse collection costs. Food scraps generally are heavier than yard waste and because of their organic decay, there are potential health and safety concerns. For this reason, before a program is established, the volume and type of scraps, space requirements and location of bins and equipment and the end use of the compost must be assessed. Before major investments are made in composting of food scraps, clear regulations governing the handling of food scraps are needed.

Sources:
Partnership for Recycling, 2007
N.C. Division of Pollution Prevention and Environmental Assistance, 2009

Alcohol Beverage Control Container Recycling

In the mandated recycling tactic noted above, specific product mandates are briefly mentioned. Over the past year, the South Carolina recycling industry has entered this arena by supporting an ABC recycling bill. Similar legislation has been enacted in North Carolina. There, NC ABC permit holders are required to recycle beverage containers that are sold at retail for on premises consumption. Beverage containers include glass bottles, aluminum cans and plastic bottles**.** For

now, it appears that glass bottles will be the majority of the materials generated for recycling, especially by weight, followed by aluminum and then plastic.

Prior to the ABC laws, North Carolina was recycling between 12-17% of the glass generated. It is now estimated that 30-35% of North Carolina generated glass is now recycled. Among local government collectors, glass recovery increased 39% from 2007 to 2009.

At the industry roundtable, officials recommended the mandatory recycling of alcohol beverage containers that are sold at retail for on-premise consumption. In 2010, Senate Bill 173 addressing the recycling of beverage containers was introduced. The proposed legislation includes flexible collection methods which can be managed by a contractor or by the retailer. The bill was sent to Senate Judiciary Committee. During testimony, some tourism officials registered their opposition to the proposal and at this writing, the bill has been tabled. In the near term, the recycling industry business environment committee will build alliances with other business, environmental and local government groups including the South Carolina Tourism Alliance, South Carolina Conservation Voters, South Carolina Coastal Conservation League and Upstate Forever to determine where there are questions that need to be addressed and where there is common interest in advocating for a required program.

Advanced Disposal Fee (ADF)

ADFS generally are paid at the point of sale. The ADF is often applied to high cost or difficult to dispose items. ADFs provide significant funding primarily targeted to clean up programs but also targeted to general waste management efforts. South Carolina was one of the early adopters of ADFS on multiple products including $2 per new tire, $.08 per gallon of motor oil, $2 per white good (white goods are major appliances) and $5 per vehicle battery. These funds are used to finance disposal and clean up of these items and general state waste reduction efforts.

At this point, there are no specific recommendations for additional ADFs and if producers are shouldering the life cycle of their products and packaging, the need for advanced disposal fees on additional products may be less necessary.

Producer Responsibility

Manufacturers are the most knowledgeable about their product's development, marketing and generated waste. With producer responsibility or product stewardship, the duty is on the producer to consider all phases of a product's life cycle. Programs can include reuse, buy backs, recycling programs and energy production. In some cases, duties are delegated to third party contractors but ultimately the responsibility is in the producer's court. Half of US states have some form of producer responsibility law generally applied to electronic waste. In May of 2010, South Carolina enacted a producer responsibility law that will go into effect in 2011. On their own accord, some producers have instigated efforts to incorporate the "cradle to cradle" concepts as part of their sustainability philosophy.

Case Studies:

Burt's Bees, Durham, NC.

Burt's Bees works to minimize office waste through a company-wide recycling program. In 2006, they partnered with Sonoco to recycle all company waste including manufacturing materials. Burt's Bees now has an operations team in place to drive their 2020 goals, specifically focused on LEAN principles and a zero waste initiative.

Freightliner Custom Chassis Corporation, Gaffney, SC.

Freightliner Custom Chassis Corporation is the first chassis manufacturer and first company within the trucking industry to achieve Zero Waste to Landfill Status in the United States. Freightliner went from disposing 250,000 pounds of solid waste per month in January 2007, to zero pounds in October 2009, as a result of environmental efforts implemented at their facility. Parent company, Daimler Trucks North America, chose Freightliner as a pilot facility for this initiative, which transitioned from a 94.1 percent solid waste disposal rate to landfill-free over the course of a year.

Rooms To Go, Seffner, FL.

Over the last two decades, Rooms To Go eliminated over 160,000 tons of landfill waste and thousands of cubic yards of landfill space. In 2006, Rooms To Go started their first recycling center in the Lakeland, Florida distribution center. Loads of cardboard, various types of plastics, styrofoam, and wood were collected. Since that time, they have integrated recycling centers, each from 5,000 to 50,000 square feet, into their distribution centers.

In 2007, alone, Rooms to Go recycling business produced $3 million in revenue due to the company's overall growth and the high scrap material prices at the time. In addition to the high profit margin, these practices have positive environmental ramifications. In 2008, approximately 96% of their cardboard and foam was recycled along with 87% of plastic and wood.

Officials estimate that the company has spent $3 million dollars on the initiative equating to one year's revenue from recycling operations alone. Expenses now are for routine maintenance so income flows to the Rooms To Go bottom line.

Incentives

Pay As You Throw (PAYT)

Pay As You Throw (PAYT), also known as Save Money And Reduce Trash (SMART), is unit based or variable rate pricing for garbage disposal that has been implemented in communities across the country as an incentive to reduce waste. With PAYT, residents pay only for the trash they generate, similar to how they pay for other utilities like electricity or water. The less of a service one consumes, the less they pay. Residents frequently pay a flat sanitation waste management fee, so it is hard to isolate what they pay for disposal in the landfill versus what they pay for recycling. PAYT extracts the true cost of trash collection from annual local taxes so that people know the true cost of landfilled waste. In addition to decreasing the trash generation rate and the need for additional landfill space, studies show that PAYT increases the recycling rate by 20-27% when implemented in conjunction with curbside recycling. Local government savings

from diverted landfill wastes can cover recycling and composting costs and provide revenue from the sale of the recyclables.

Forum participants noted their support of incentive measures including PAYT. If PAYT is pursued in a larger way, it will be important to communicate information of full costs of disposal. Additionally, without accurate full cost data, residents may see PAYT as a new expense. Other perceived issues relates to illegal dumping, litter, and open burning. In fact, communities with PAYT programs generally have found that these activities did not increase if residents were provided recycling and composting services.

Case Studies:

Attleboro, Massachusetts (population 42,833)

It took a number of tries before Attleboro's city council approved a PAYT program. Finally, a cost/benefit analysis demonstrated that unlimited trash pick-up would increase residential fees by $60 a year. The PAYT system would only raise the fees by $30 a year. After adoption of the program, the fees actually decreased due to the 36% increase in recycling coupled with the decrease of 2,587 tons of garbage. The current diversion rate in Attleboro is 44%.

Dubuque, Iowa (population 92,724)

The Dubuque PAYT program collects from 20,000 households and offers multiple systems of PAYT for residents to choose from including bags, tags and containers. Dubuque's recycling tonnage has increased by 30% and its garbage tonnage has decreased by 28%. Currently, they have a 40% diversion rate.

Sometimes there are concerns about how programs like PAYT affect low income families. Dubuque has addressed the issues of elderly, large, or underprivileged families. They offer a 50% discount on the monthly fee to low income families of five or more, low income elderly and households meeting Section 8 federal assistance guidelines.

Fort Collins, Colorado (population 118,652)

Fort Collins has six private companies providing curbside recycling ranging from national players to locally owned and operated businesses. When PAYT initially started, there was a 53.5% participation rate. Now, 90% of the households are participating in the recycling program, up from 53.5% before the PAYT system was implemented. The city currently diverts at least 27% of its solid waste and has a goal of 50% diversion for 2010.

The haulers were concerned about the first rendition of the PAYT plan because some of them were unable to cover their fixed costs. City officials worked with the haulers to develop a mechanism that allowed them to establish a flat monthly fee, in addition to the volume charges, to cover fixed operational costs. The flat fee cannot exceed 50% of the total trash bill, and both the flat fee and the volume-based rate must be displayed on customer bills. If a household exceeds its maximum service level, the hauler must charge for the excess waste volume. Failure to charge for excess waste or for violating any other element of the PAYT ordinance could result in a hauling company losing its municipal hauling license.

Resources:
SMART BET Calculator
http://www.epa.gov/waste/conserve/tools/payt/tools/smart-bet/index.htm

iRecycle and Win!

The City of Spartanburg, Coca-Cola, NURRC and BI-LO joined efforts on the iRecycle and Win! incentive program that encourages city residents to participate in curbside recycling. In conjunction with the new single stream program and the rolling 192 gallon recycle carts, if citizens apply the *Give It Back* sticker to their roll carts, they can participate. The 'prize patrol' scouts neighborhoods looking for carts displaying the sticker. Random carts are inspected and if they have followed recycling guidelines, the household wins a $50 Bilo gift card. One household is selected each recycling collection day.

Recycling Reimbursement Program

In order to reduce recycling costs for seniors, the Village of Gurnee, Illinois implemented a program that provides a rebate to qualified seniors to cover the costs of recycling collection. Seniors must be enrolled in the state's homestead exemption program and have a maximum household income of $55,000.

Tax Incentives

In the mid-1970s, Oregon implemented tax credits for recycling related business capital investment. Since this time, most states have implemented some version of tax credit or exemption legislation. Credit generally applies to facilities, machinery and equipment. In some cases, however, credit is issued for products made from reclaimed materials. A few states, including New Mexico, target new equipment that opens the need for new jobs. Tax credits are not as effective for new businesses, so some states also give grants and loans to encourage new activity.

South Carolina has a number of financial incentives for recycling initiatives including mechanisms to offset corporate income tax liability, job tax credits to businesses creating a monthly average of 10 new recycling processing or manufacturing jobs, and sales tax exemptions on equipment. Worker training through readySC (valued at $2,500-$9,500 per person) and a federal incentive equal to a 50% depreciation deduction on recycling property also are available. Industry officials have suggested reviewing incentives in other states to determine where there are opportunities to increase financial incentives for existing and new businesses. Incentives should be promoted particularly to industry considering location in South Carolina.

Grants and Stimulus Funding

Industry officials discussed the need for funding to create more recovered material markets. There is particular interest in funding for research that is applicable across the industry and on projects that demonstrate how waste reduction and recycling can be beneficial to market development.

The Energy Efficiency and Conservation Block Grants authorized under the American Recovery and Reinvestment Act of 2009 may offer opportunity for recycling businesses as long as they show substantial energy savings. Because of the limited dollars available, it may be difficult to compete against the energy savings of buildings. Still, other federal funding and grants should be explored to determine funding feasibility.

Solid Waste Plan and Act Update

Some states require that local governments reach waste goals that are generally identical to the state goal. For over two decades, states have been establishing statewide waste reduction goals ranging from 15% in the early days to Florida's more recent 75% by 2020. States with the lower goals generally were the early goal adopters with earlier deadlines. At this point, few states have penalties for not meeting the stated goals.

In South Carolina's 2000 solid waste act amendment, the recycling goal was increased to 35% of the MSW generated and a disposal cap of 3.5 pounds or less of MSW per person per day. The South Carolina recycling industry has an interest in exceeding the state's 35% recycling goal. As the goals are increased, the diversion rate is expected to increase, which means more recovered feedstock. Due to emerging climate change, energy issues, product stewardship and technological advancements, South Carolina DHEC recommends updating South Carolina's Solid Waste Management Plan (State Plan) and the South Carolina Solid Waste Policy and Management Act (Act). The recycling industry will contribute to discussions and advocate for recycling processes and policy particularly when these relate to business activities and growth.

Policymaking Coalitions

The recycling industry will encourage political and agency leadership that supports the industry and will advocate and support policy which institutionalizes the practice and business of recycling throughout the state. Such support will be fostered at the municipal through the highest levels of government.

Systematic Approach

In the long run, sustainable businesses are looking to make wise investments in stable business environments, not short term schemes in cheap labor and insufficient taxes. While applicable to all business and not solely to the recycling industry, officials recognize the importance of comprehensive tax reform that covers priority costs and recruits industry that contributes to the recycling value chain. In addition to policy that supports the business of recycling, the recycling cluster will review and assess critical functions including transit, haulers and logistic measures to determine if policy changes are in order.

Organizational Development

Since it was organized in 2007, the recycling cluster has engaged recyclers and a variety of affiliated businesses including marketers, attorneys, and end product users. Among other accomplishments, the cluster has made progress in education, legislation and launching the recycling license plate. Staff from the South Carolina Department of Commerce, New Carolina and South Carolina DHEC has been instrumental in all of these efforts. These accomplishments also have been made possible by numerous industry contributed volunteer hours. The actions necessary to implement this strategic plan are ambitious and will require increased activity. To ensure the recycling industry's long-term success, a formalized organizational structure should be developed that is backed with by-laws and a short and long-term action strategy.

Goal:

The recycling cluster will have an organizational structure that includes procedures and processes that represent and optimize the value of the recycling industry and its component businesses.

Tactics:

- **Develop a management plan and by-laws to formalize procedures and expectations.**
- **In view of the strategic plan and the additional demands on staff and industry representatives, assign the strategic plan priorities, review current capabilities to accomplish the priorities and assess the long-term continuity of these functions. Meet with key stakeholders to gather input and refine the proposed structure as needed.**
- **Develop a budget based on the strategic plan priorities and review all current and potential recycling industry funding sources. Determine where there are gaps in resources and how the funding gaps will be accommodated.**
- **Design a tracking and evaluation system to assess and refine, as needed, the organization's progress.**

The industry cluster and the Commerce staff have made tremendous headway in annually updating and then implementing portions of the annual

work plan. In light of the strategic plan, these work plans should be realigned as needed. With some tactics, realignment will be minimal. In other cases, a more concerted effort will be necessary. In all cases, outlining the short and long-term strategies lets the membership know the upcoming initiatives and plans and opens the door for other members' involvement in areas where they can or want to participate.

By-laws will provide a guide as to how the organization will operate. One of the early steps will be to assess the current board and committee structure, their assigned tasks and then a determination as to how the structure is working.

In terms of areas that the cluster should target, an ongoing comment from recycling officials relates to the need to increase public and private sector industry membership. A focus on diversity within the industry could go well beyond large and small businesses in different commodity and functional areas. Prospects for ideas and increased business and job potential also can come from encouraging membership that reflects the state's geographic, gender and racial diversity.

As the membership initiative continues, an important consideration is, "what motivates people to become involved in the industry group and what are the benefits of membership?" In this realm, it will be important to articulate the benefits and the competitive advantages of cluster participation. (*See Chapter VI, Leveraging Infrastructure.*) Here, in addition to demonstrating the connections through the value chain, it is important to keep training and research interesting and on the cutting edge. In addition, collaborative opportunities in operations, marketing and information exchange will be explored. Of course, the recycling industry website should be geared to the membership's needs with a searchable research database and up to date recycling specific events and notices. Over time, membership benefits may include enhanced technical assistance and referrals, a mini-grant program to help with certain recycling start up business needs such as training, and incentive programs for model practices and policies. A concerted effort to outline the cluster's benefits in brochure, website and talking point form and a membership initiative targeted to non-represented groups should be developed in the near term.

While the industry group has quarterly meetings, in the interim periods, there are committee meetings and phone conference calls. The Commerce staff provides regular e-mail updates on recycling activities to the membership. These updates are important to keep membership engaged with the cluster and informed of new recycling industry initiatives. While this information is delivered electronically to members, it later should be transferred to the website database where members might be able to search back issues for relevant information. Occasional email blasts that relate to important events or research findings also are useful to keep members informed and connected.

Fostering relationships with organizations that have similar interests including SERDC, SWANA and CRA, as well as economic development alliances, governmental agencies and environmental groups are imperative connections for the industry. Communication takes time but as mentioned in Chapter VI. Networks and Partnerships, working with other groups, including other clusters and industry associations offer collaborative potential. For instance, consider the textiles cluster and their knowledge about textile scrap whereabouts or the logistics cluster and the potential for enhanced information or even collaboration on the transit of recovered niche products. Determining common interests and developing programming ideas, research and joint marketing or educational pieces could benefit all participants.

This strategic plan has outlined a variety of tactics that go beyond existing operations including the communications plan and membership recruitment, marketing development, advocacy, database development and website management, expanded research partnerships, newsletter development, and outreach. The industry will need to determine where the priorities are most pressing. To shift the effort into high gear, the methods and means to accomplish this plan must be outlined in the near term.

Since its inception, the industry cluster has had the support and direction of the Commerce Department Business Services staff and the New Carolina structure. Currently, these support systems work well. Other in and out of state clusters have addressed staffing in varied ways. For instance, the South Carolina tourism cluster has been staffed by South Carolina Parks Recreation and Tourism, then later by New Carolina and currently by the South Carolina Chamber of Commerce. Some of the other clusters are staffed within their professional

alliances. In a few other states, clusters are housed within state agencies. Some of the cluster functions are managed within university settings such as the on-line value chain analysis for the North Carolina textile industry that is maintained by the North Carolina State College of Textiles. In addition, functions frequently are contracted to private entities for marketing and lobbying.

As implementation of this strategic plan gains momentum and demands increase, the administrative support systems should be assessed to determine if there are functional needs that are not being met and if they, in fact, can be addressed within existing systems. There will come a time when the current level of support will need to be increased. Within the cluster concept, it is expected that the organization will have, at a minimum, a half time person dedicated solely to cluster activities. Collaborative potential with current and potential networks and partnerships may be important factors in assessing and managing these long-term needs.

To ensure that this plan becomes a reality, all current available funding sources should be explored and assessed. A budget based on the industry priorities will be developed. Where there are gaps in funding, other avenues should be explored. To sustain the program over time, a dedicated funding source should be established. As mentioned in Chapter VI. Policy, in addition to current funding sources, a state initiated waste fee could fund waste and recovered goods management costs and the recycling cluster administrative fees. Other states with statewide tipping fees have funded grant programs for recycling demonstration initiatives, research and education program costs. Some industry officials suggest that generated funds should be managed and administered by the recycling industry via a public/private composed board rather than the funding resting solely within a government agency. Since there will be a time lapse before a statewide management fee is imposed, in the interim, grants and other funding options should be explored to cover unfunded marketing expenses and other non- or minimally funded activities and research. It is worth noting that industry sponsorships for specific research and program efforts have been successful in the past. Certainly, these sponsorships should be considered as one component in an overall public and private funding strategy.

VII. Implementation Sheets

The following worksheets outline the course of action needed to progress towards the stated goals. It is important to determine who will lead and participate in the accomplishment of the tasks, and then identify applicable resources. Determined priorities as well as well-structured evaluation criteria are desirable so that efforts are expended in the most efficient manner. To ensure efficiency, the planning committee should consider implementing either specific deadlines (in month or year spans) or a more general priority approach. The priority approach can be categorized as follows:

- *Near term: The structures are in place to implement these structures now. No new legislation is required to get started and only minor reallocations of resources or people are needed to implement this category of recommendation.*

- *Mid-term: Greater reallocations of staff and other resources and/or regulatory changes may be needed to implement these activities. Accordingly, the implementation period is longer (twelve to twenty-four months).*

- *Long term: More significant changes likely are required for these activities. Public education and support will be required and the process of implementing these recommendations will take several years. These tactics represent long-term strategies for the industry.*

The following tactic and implementation sheets provide a foundation for group endeavors.

Communications and Marketing Goal SC's recycling economy will be prominent and respected in the quest for state prosperity	Tactics	Details/Resources	Lead/Support	Priority/ Timeline	Evaluation Metrics
	1. Develop an integrated, professional public relations campaign that pushes the connection between public responsibility for recycling and SC's economic prosperity.	• Review name and message • Design the industry brand • Develop collateral materials • Develop and maintain a state of the art website that includes a searchable database • Investigate development of a social media campaign			
	2. Increase overall knowledge of the SC recycling workforce and business potential.	• Take message and materials to the public using free and paid media and professionally designed materials based on updated message and brand			
	3. Educate state's residents and businesses on the true costs of solid waste disposal and the need to develop sustainable, feasible, and more cost effective ways to deal with waste.	• Further develop and enhance website • Organize and publicize speakers bureau • Submit proposals for conference presentations • Consider social media as vehicle for educating public			
	4. Engage in advocacy opportunities related to recycling related business development.	• Provide talking point and other researched materials for industry spokespeople and the general membership • Develop op-ed pieces and be sure this information is readily available on the industry website			
	5. Build coalitions with policymakers at the federal, state and local levels.	• Have a presence at meetings and events that policymakers attend including the MASC and SCAC. • Continue to host and invite policymakers to the legislative day and Business Forum • Become a technical resource for policymakers through white paper development and other means.			

Networks and Collaboration Goal SC will have a comprehensive recycling industry network that provides compelling rationale for widespread industry connections and collaboration	Tactics	Details/Resources	Lead/Support	Priority/ Timeline	Evaluation Metrics
	1. Facilitate partnerships with business in order to explore collaborative opportunity and to increase the value of recyclable material.	• Identify strategies and venues to meet partner businesses • Collect data and materials to support dialogue			
	2. Consider where sector gaps exist in the industry and actively recruit participation from businesses with complementary and needed skills/interests.	• Using database, supply map or value chain study identify gaps • Identify specific members that can fill gap areas and recruit			
	3. Encourage regional, interagency and inter-jurisdictional cooperation and coordination in policy and business development.	• Determine issues of common concern and identify consolidation or collaborative opportunities			
	4. Collaborate with government agencies to identify potential financial resources or incentives for recycling.	• Research potential funding sources and identify partners for joint funding requests			
	5. Create an institutional framework for the recycling industry that encourages and supports improved communication and partnering potential on comprehensive and specific needs and opportunities.	• Initiate discussions within the cluster to build relationships with potential partners.			
	6. A comprehensive supply/value chain analysis will yield potential collaborators for individual businesses and the Recycling Industry Group. The value chain is a valuable tool for discovering areas where complementary processes can be matched.	• See Chapter VI, *Leverage Infrastructure*			

Leverage Infrastructure Goal

SC's recycling industry will leverage its assets to increase value, strength and overall competitive advantage to its individual business components and the industry as a whole

Tactics	Details/Resources	Lead/Support	Priority/ Timeline	Evaluation Metrics
1. Identify and assess all elements in the recycling industry value chain in order to better understand and enhance the SC's recycling industry competitive advantage.	• Review other cluster value chain analyzes • Identify unexpected linkages with other clusters and businesses • Consider study components and potential funding mechanisms • Develop RFP and time line			
2. Identify in-state and regional businesses and business locations and proximity to materials processing facilities and transportation hubs and infrastructure.	• Review existing data base • Identify other data sources • Determine data gaps • Develop strategies to close data gaps • Map components			
3. Explore ways to cut down on transportation costs for the recycling industry by developing partnerships and collaborative projects with the Logistics Cluster.	• Schedule discussions with logistics cluster leadership • Share data, maps, industry issues and collaborative potential			
4. Demonstrate economic and environmental benefits derived from regional markets.	• Review model distribution, processing, and hub/spoke models to determine feasibility for SC recycling • Explore the out of state recovered goods suggestion			

Business Development and Recruitment Goal **Build a critical mass of sustainable recycling related businesses in SC**	Tactics	Details/Resources	Lead/Support	Priority/ Timeline	Evaluation Metrics
	1. Initiate discussions and information exchange that supports new business recruitment particularly where new or increased feedstock is anticipated.	• Determine industry spokespeople • Collect contact information and schedule conversations with state and regional recruiters and economic developers • Collect pertinent data and develop materials and strategies that bolster recruitment			
	2. Support existing businesses and obvious linkages with feedstock suppliers.	• Map supply chain • Consider traditional and non-traditional feedstock sources • Develop value chain (see Chapter VI, Leverage Infrastructure) • Integrate supply chain and value chain • Promote and distribute findings			
	3. Review and assess data collection activities and work to ensure that business activity is reported to its fullest extent.	• Review reporting collection portals particularly for business reporting • Determine and articulate the value of business reporting to the individual business and industry well-being • Determine where recycling cluster can influence reporting behavior – education, incentives? • Support agency and policymaker attempts to enhance and strengthen data.			

	4. Support value chain analysis efforts in order to understand SC's waste streams, feedstock needs, gaps and where there are particular competitive advantages.	• See Leverage Infrastructure. • Research data collection modes and business identification methods • Review Commerce's supplier registration format developed for Boeing. Determine if a similar system might work for identification of value chain components • Identify costs of value chain analysis used by other clusters. • Assess strength of value chain analysis to business strength, expansion or development			
	5. Assist Commerce Department as needed to assess recycling workforce needs and assist schools with training programs that support enhanced or new job skills.	• Notify officials of technical and educational resources available in the recycling cluster. Invite collaboration. • Identify and pursue opportunities to communicate with workforce development and economic development agencies to illustrate the importance of the industry to job creation and training.			

Research and Education Goal SC will be on the cutting edge in recycling education, research, technology and economic enterprise	Tactics	Details/Resources	Lead/Support	Priority/ Timeline	Evaluation Metrics
	1. Advance knowledge in the recycling field and its transition into economic value.	• Identify, collect or develop and distribute information that is applied, research rich and visionary.			
	2. Develop academic partnerships among universities, research institutions, industry, governmental agencies and non-profits to build a collaborative research infrastructure.	• Initiate discussions with potential partners focused on research needs and capabilities.			
	3. Based on stated industry needs, develop pilot demonstration and signature research projects.	• Develop project priorities. • Once priorities determined, establish project details and potential partners. • Research funding sources and pursue if applicable.			
	4. Explore, pursue and secure private, non-profit and government funding sources that target research and higher education.	• With the priority issues identified, secure grant writing resources within the industry cluster. If not available, investigate other grant writing resources. • Work with university resources to develop projects and identify funding sources.			

	5. Where applicable, use universities as resources.	• Review the industry focus areas and determine where there are additional needs where universities may serve as resources. • Develop relationships with key university officials. Initiate conversations and invite members and/or students to meetings, conferences, forums. • Identify opportunities for student involvement through poster or research idea sessions at meetings. • Consider the possibilities which provide a learning environment and a business benefit: – data collection by student classes, – public service activity programs and – training capabilities.			
	6. Promote the research and technology capabilities in SC.	• Use research information and academic connections and resources in marketing, advocacy and messaging.			
	7. Partner with training and education providers to develop age appropriate curriculum modules for K-16 that relate to personal recycling behavior and recycling's economic impact and job	• Investigate who is providing training opportunities and whether training includes the connection between recycling and job growth and the economy			

	development potential.	• Approach educators and share materials and resources. Offer input on curriculum development.			

Policy Goal **The recycling industry group will facilitate strategic policy decisions that foster a sustainable and prosperous recycling**	Tactics	Details/Resources	Lead/Support	Priority/ Timeline	Evaluation Metrics
	1. Advocate for consistent and mandatory reporting of data that includes internal and externally generated recovered and landfilled material.	• Review reporting issues – what information is gathered, what is not, method of collection, how often for municipalities and businesses • Develop reporting importance rationale talking points targeted to business community. (For instance, higher numbers translate to more feedstock thereby influencing business recruitment.)			

	2. Support transparency in accounting and fee structures.	• Identify recent related studies and data. • Develop case studies in selected SC local governments to better understand fee structure development • Identify and initiate conversations with organizations working in 'transparency'. • If data is not already available, consider citizen survey on waste management and recycling fees. *Do citizens know what they pay for recycling and for landfilling? Is it important? What if one method meant more jobs?*			
	3. Investigate landfill costs and subsidies and tipping fees to determine if and where there are imbalances and corrections needed in fee structures.	• Discuss availability of fee/subsidy data with SC DHEC and US EPA. • Review available SC subsidy and fee data and determine where there are comparables within and out of state. • Determine if there is need for further study and where recycling industry can be helpful. • Seek information and clarification on all costs associated with handling materials.			
	4. Review landfill bans of designated materials where there is market value.	• Review landfill bans in other states on non-hazardous materials that are marketable. Study authorizing plan, legislation and impacts on markets. • Assess SC feasibility			

	5. Where feasible, promote mandated recycling with a composting component.	• Develop education, message development and collateral materials to address connection between mandated recycling and sustainable industry. • Review health issues related to composting and determine how other states address composting mandates.			
	6. Advance the case for mandated recycling of alcohol beverage containers.	• Develop partnerships with likeminded organizations • Continue conversations with hospitality industry • If data unavailable, determine potential economic impact of legislation • Determine if there are areas of compromise and what it would take to make legislation work in a general sense.			
	7. Assess Need For and Encourage Advanced Disposal Fee (ADF) where need exists	• Investigate ADF's in other states on materials where value is high • Determine if a need exists and feasibility of implementation on non-hazardous material			
	8. Encourage Producer Responsibility	• Investigate producer responsibility success stories in other states • Determine if and where need exists and feasibility of implementation			
	9. Encourage local government adoption of Pay As You Throw and industry/government/citizen initiatives that reward or incentivize recycling.	• Review PAYT financial case studies from other communities • Support pilot PAYT projects as suggested in RMDAC work plan • Develop PAYT and other incentive program talking points with economic analysis components			

	10. Review model financial incentive programs that support recycling and materials recovery and determine need for additional financial incentives in SC.	• Collect financial incentive information from other states • Review SC incentives to determine applicability to recycling • Determine gaps and greatest need scenarios that would enhance business recruitment, sustainability or growth			
	11. Work with SC DHEC and other stakeholders by providing recommendations related to the SC Solid Waste Policy and Management Act and the update of the state's Solid Waste Management Plan.	• On behalf of recycling industry, write letter to SC DHEC offering to serve as resource during the plan updates, goal evaluations and act revision deliberations. • Determine cluster representative(s) most appropriate for this effort.			
	12. Review the state's 35% recycling goal and assess its progress and rationale in light of advanced technology and feedstock need.	• Review goals from other states and actual recycling rates. Determine the connection between goal and increased recycling numbers. • See 11 above.			
	13. Build coalitions with policymakers at the federal, state and local levels.	• Continue to host Legislative Day • Send interim policy reports and updates to legislators. • Participate in relevant statewide organizations including municipal, county, chamber, solid waste and economic development programs.			
	14. Support policies and initiatives that take a holistic, rather than a piecemeal approach, to a competitive business environment.	• Review consequences of all policy support and advocacy issues to ensure that all facets are understood and can be addressed • Develop a criteria and evaluation component.			

Organizational Development Goal The recycling cluster will have an organizational structure that includes procedures and processes that represent and optimize the value	Tactics	Details/Resources	Lead/Support	Priority/ Timeline	Evaluation Metrics
	1. Develop a management plan and by-laws to formalize procedures and expectations.	• Review and coordinate strategic plan tactics and annual work plan actions. • Determine tactic timelines and assign responsibilities. • Develop by-laws for industry cluster.			
	2. In view of the strategic plan and the additional demands on staff and industry representatives, assign priorities, review current capabilities to accomplish the priorities and assess the long-term continuity of these functions. Meet with key stakeholders to gather input and refine the proposed structure as needed.	• Determine priorities and timelines (for membership recruitment, website, research database and so on.) • Assess current capabilities and short and long term needs. • Work with stakeholders to gather ideas and develop long term management strategy.			
	3. Develop a budget based on the strategic plan priorities and review all current and potential recycling industry funding sources. Determine where there are gaps in resources and how the funding gaps will be accommodated.	• Identify all existing funding sources. • Determine current and future funding needs and gaps • Where there are gaps, identify potential funding sources			

	4. Design a tracking and evaluation system to assess and refine, as needed, the organization's progress.	• Identify evaluation metrics for all tactics and develop tracking format and reporting mechanism			

VIII. Conclusions

The tactics outlined in the previous chapter are important to realizing the industry's goals. As soon as practical, the planning committee or assigned task forces should assess and establish lead and support responsibilities and timelines so that resources and budget impact can be identified. Likewise, based on the input of the planning committee or assigned task forces, objective and consistent measures to evaluate levels of progress or success should be determined. Inputs and products are important actions, but more important are the outcomes or actual change such as tons diverted, job or profit growth or new business development. Of course, it is also important to consider the extent to which the outcome can be attributed to the tactic.

This Strategic Plan is based on current conditions and expectations of future conditions. While it provides long-term guidance, it should be reviewed annually in light of changing conditions with a complete reevaluation every five years.

Finally, recycling has taken on a heightened sense of purpose in recent years because of its substantial economic benefit but also because of opportunities for carbon offsets and general concerns about fiscal and environmental responsibility. Fortunately, South Carolina's recycling businesses and their partners have a variety of attributes and resources to facilitate the recycling economy. Because of limited financial means and the need to balance competing priorities, the time is ripe for the recycling cluster to be more involved in sustainable solutions and to grow and empower a prosperous recycling economy.

APPENDICES

Appendix A. Terms and Definitions

A supportive list of recycle industry specific terms referenced throughout the document.

Composting - recovering and processing discarded organic materials into a soil amendment, fertilizer and/or mulch. Composting is a form of recycling.

Construction - any recyclable or non-recyclable waste that results

Convenience center – locations where materials that cannot be collected through curbside pickup can be dropped off in order to be recycled, thus helping to reduce the amount of materials going to the landfill.

Demolition Debris - from construction, remodeling, repair, or demolition of buildings, roads, or other structures or from land clearing for development and requires the removal from the site of construction, demolition or land clearing.

Corrugated Paper - paper or cardboard manufactured in a series of wrinkles or folds or into alternating ridges and grooves.

Ferrous Metals - ferrous and alloyed ferrous scrap materials derived from iron including household, industrial, and commercial products including other cans and containers.

Flow Controls - legal authority used by state and local governments to designate where municipal solid waste must be taken for processing, treatment or disposal.

HDPE Bottles - all bottles made of high-density polyethylene (HDPE), such as milk, juice, detergent, and other bottles.

Materials Recovery Facility - facility where recyclables are sorted, baled or otherwise processed in order to prepare them for end users.

Municipal Solid Waste (MSW) – combined residential, commercial, institutional/non-profit and industrial packaging/office waste generated. This includes paper, cans, bottles, food scraps, yard trimmings, packaging and other items. It does not include industrial process waste like scraps and by-products from the manufacturing process, construction and demolition debris, automobile bodies, agricultural waste, combustion ash, mining waste and sewage sludge as well as hazardous, infectious and radioactive waste. In South Carolina, tire derived fuel, yard trimmings used as boiler fuel and used motor oil (from do it yourselfers) are calculated in the MSW recycling rate. EPA does not consider these commodities in its MSW calculations.

PET Containers - all bottles made from polyethylene terephthalate (PET), such as soft drink, oil, liquor, and other types of bottles.

Single stream recycling – paper products and containers (plastic bottles, cans and glass bottles) are collected in one bin and sorted at another site.

Source-separated - divided by consumers into different fractions for disposal, recycling and composting.

Tip Fees - the fees charged to haulers for delivering materials at recovery or disposal facilities. Typically, the price paid per ton, cubic yard, or other measurement to dispose of waste from off-site into a larger transfer station vehicle for transport to a solid waste handling facility.

Total Solid Waste (TSW) – municipal solid waste (MSW) combined with construction and demolition (C&D) debris, process waste and any other material that is recycled instead of landfilled or incinerated

Transfer Station - a permanent fixed, supplemental collection and transportation facility, used by persons and route collection vehicles to deposit collected solid waste from off-site into a larger transfer station vehicle for transport to a solid waste handling facility.

Appendix B. Enacted Legislation 2009

Bottle Deposits and Bills

State	Bill(s)	Description
CT	HB5095	Allows the state to capture unclaimed five-cent deposits - previously kept by beverage wholesalers- to compensate for the 1.5 to 2-cent handling fee they must pay retailers for each bottle or can redeemed.
ME	LD397	Amends state's bottle bill on several levels. In addition to increasing the programs handling feel to 3.5 cents, up to March 1, 2010, and for cents after that point, the decree also establishes a per-redemption limit of 2,500 contains, but provides exemptions to that limit. Additionally, the law establishes new redemption center locations/populations requirements.
ME	LD733	Examines the environmental effects of dual-stream collection systems on beverage containers.
NC	HB759	Extends the one year stay of compliance with the state's mandatory ABC recycling law, in order to accommodate ABC permitees without access to recycling services.
NC	HB760	Establishes landfill disposal ban on rigid plastic pesticide containers

Compost

State	Bill(s)	Description
IL	SB99	Addressing particular uses for compost
IL	SB1932	Requires state agencies to use compost materials in all land maintenance activities paid for with public funds
VT	HB145	Addresses Composting

Electronic Waste (E-waste)

State	Bill(s)	Description
HI	HB1809	Amends current state program by adding televisions to the recycling system. Also, deletes the annual sales of specialized computers provisions for manufacturers of electronic devices and requires that all recycling programs for electronic devices be fully implemented and operational by January 1, 2010
IN	HB1589	Targets the recovery of video display devices generated by households, public schools, and small businesses, including televisions, computers, computer monitors, peripherals, fax machines and DVD and VCR players.
MD	HB1263	Requires motor vehicle manufacturers , individually or as a group, to develop and submit to the state a mercury minimization plan that includes information on mercury switch removal from motor vehicles

ME	LD536	Amends state program to recognize desktop printers and video game consoles, and clarifies that digital picture frames are subject to the recycling laws. Also, replaces manufacturer responsibility provisions with an annual registration requirement.
ME	LD973	Provides for the safe collection and recycling of mercury-containing lighting
ME	LD1156	Changes the basis for television manufacturers' responsibility for recycling televisions to a market-share basis
MI	HB6714/6715 SB 897/898	Requires OEMs to institute a take-back program for such electronic devices as desktop and laptop computers, computer monitors, and other video display devices beginning April 1, 2010
MN	HF1648/ SF1486	Amends reporting requirements for video display device manufacturers and retailers, and limits the amount of recycled electronics, which can be applied to future recycling obligations, to no more than 25 percent for any program year.
MS	SB2976	Creates a state review committee responsible for developing a recycling and asset disposition system for state agency-generated obsolete electronic equipment.
MT	SB424	Establishes the Mercury-Added Thermostat Collection Act
NH	HB338	Establishes a landfill disposal and incinerator ban on video display media recorder/players and computers
NH	HB423	Requires state to develop an outreach campaign to disseminate information on recycling materials, including e-waste
NJ	A3343/ S2144	Amends program to include used televisions, plus redefines several items associated with the act
NV	AB426	Requires state study programs for reusing and recycling computers and other electronics
PA	HR292	Designated June 2009 as Cell Phones for Soldiers Month in Pennsylvania
UT	SJR4	Urges state to work with the Recycling Coalition of Utah to develop recommendations for addressing electronic waste
WA	HB1522	Amends state e-scrap program by requiring that only collectors registered with the state take part in an OEM's program as a collector
WI	SB107	Establishes a producer-responsibility system for such electronics as computers, computer monitors, printers, VCR players, television and cameras

Fee Creation and Exemption

State	*Bill(s)*	*Description*
AR	HB 1264	Exempts Keep Arkansas Beautiful (KAB) and KAB affiliates from landfill fees during those organizations' annual campaigns
AR	SB870	Allows the state to authorize a solid waste landfill to collect fugitive amounts of yard waste for processing into landfill gas as an alternative energy source.
CO	SB289	Concerns the state's recycling development fee imposed upon waste tires

ID	H170	Amends existing law to increase the fee from $5 to $10 dollars for individuals purchasing a lead acid battery
MO	HB661	Among other things, establishes a 50-cent-per-tire fee assessed to all new vehicle tires purchased in state, with a certain percentage of monies generated being used toward such in-state projects as tire cleanup
MT	HB21	Repeals the December 31, 2009 termination date for the $8-per-ton tax credit
NE	LB180	Changes provisions relating to the state's landfill disposal fee and provides grant funding for deconstruction of abandoned buildings.
TN	HB1108/ SB1160	Exempts persons, firms, or corporations dealing solely in recyclable aluminum cans from the requirements on scrap jewelry and metal dealers
TX	HB3765	Relates to the use of hazardous and solid waste remediation fee funds for lead-acid battery recycling activities
TX	SB2182	Allows an institution of higher education to charge enrolled students an environmental fee of no more than $5 per term or semester, which would be used to provide environmental improvements at the institution, such as adding or improving recycling services.

Misconduct

State	*Bill(s)*	*Description*
AR	HB1479	Creates Class D felony for the offense of damaging wires and other fixtures of telephone, cable and electronic power companies for the purpose of illegally reselling used wires.
AZ	HB2465	Establishes several laws relating to scrap metal theft
IN	SB21	Addresses the theft and distribution of scrap metal
NC	HB323/ SB729	Strengthens the state's requirements regarding secondary metals recycling, in order to prevent metal theft
OR	SB105	Increases maximum penalties against those wrongfully disposing, collecting, storing or reusing such items as mercury-based paint products, used batteries, waste tires, electronic devices, etc.

Organizational Structure

State	*Bill(s)*	*Description*
CA	SB63	Abolishes the California Integrated Waste Management Board and transfers its duties and responsibilities to the Department of Resources Recycling and Recovery
CT	SB995	Concerns individual authorizations for beneficial use of solid waste
GA	SB82	Addresses secondary metals recyclers
IA	HF826	Requires the governor to appoint the voting members of the comprehensive recycling planning task force from persons nominated by certain associations

Plastic Bags

State	Bill(s)	Description
DE	HB15	Requires stores with more than 7000 square feet of retail space or at least three Delaware locations to implement an in-store plastic bag recycling program
ME	LD367	Establishes a work group to study the environmental impacts of single-use shopping bags and how to deal with them
NC	HB810/ SB1018	Disallows retailers from providing certain plastic bags, unless the bag is reusable or compostable plastic

Research, Regulation, and Implementation

State	Bill(s)	Description
CA	SB167	Amends the California Tire Recycling Act, requiring CIWMB expand its five-year tire recycling plan to include the development projects (i.e. mitigation, cleanup, prevention, re-use and recycling) in the California-Mexico border region that address the movement of used tires from California to Mexico, which are eventually disposed of in California.
CA	SB546	Amends current used oil recycling program on several levels, including tweaking the system to longer provide loans, and develop and implement an information and education program to promote methods to reduce the amounts of used oil generated.
CO	HB1282	Requires state to create a task force to study costs and benefits of implementing both a state wide e-scrap recycling program and a landfill disposal ban on devices covered under the plan
GA	HB310	Requires the Georgia Building Authority to establish and coordinate a statewide recycling program for state agencies
GA	HB562	Creates the Pike Clean and Beautiful Authority for the purpose of recommending a county -wide recycling plan
GA	SR83	Creates a Senate study committee of Green Information Technology to study the collection, recycling and re-use of electronic products, as well as energy conservation programs and initiatives.
ID	h163	Repeals and adds to existing law to recodify the law regarding scrap dealers
IL	HB266	Amends the state's Environmental Protection Act, addressing the uses for recyclable general construction debris
IL	HB986	Amends the Recyclable Metal Purchase Registration Law
MD	HB1263	Requires state to, by July 1, 2010, establish a recycling program for recyclables generated by state agencies.
MD	HB1290/ SB473	Requires county recycling plans to address the collection, processing and marketing and disposition of recyclable materials from county public school
MD	SB14	Authorizes the Maryland Environmental service to engage in energy projects and services.

MS	HB1380	Sets aside 10 percent of state's existing solid waste corrective action trust fund for use in providing grants for recycling cooperatives established by local governments.
MT	SB247	Relates to reporting requirements for non-ferrous metals given to commercial and non-profit entities using post-consumer glass in non-recycled material
MT	SJ28	Requests state to conduct a study to evaluate methods for increasing in-state recycling and solid-waste recovery
NE	LB379	Extends scrap tire grant program
NJ	A2706/ S1781	Requires operators of scrap metal business to verify the identity of individuals delivering or selling scrap metal and maintain records of all scrap metal purchases for a specified time period.
NM	HB622	Creates a fund allocated to creating new green jobs training program
NM	HM6	Requests state to create a task force to evaluate the short and long-term costs and savings of using rubberized asphalt on state roads.
NM	SB318	Directs state funding to be used for green sector job training. Recycled-content manufacturing, recycling, composting and construction and demolition re-use projects are identified as green job industries.
NM	SM60	Requires the state to develop a plan to maximize the use of biodegradable woodchips for the betterment of the environment
NV	AB233	Makes various changes concerning transactions of scrap metal
NV	SB137	Provides for placement of recycling containers on the premises of certain apartment complexes, condominiums and state higher education branches and facilities
NV	SB186	Provides for the issuance of permits for the operation of motor vehicle tire recycling center and prohibits the disposal of such tires other than at a motor vehicle tire recycling center.
OR	HB2956	Requires RFPs or bids for construction, reconstruction, purchase, rent, lease or acquisition of the Interstate Bridge to contain certain provisions, including whether or not the proposer, in fabrication the products, can use recycled materials or materials and components that can be recycled.
OR	HB3037	Creates a manufacturer-responsibility -based pilot take-back program for architectural paint
OR	SB750	Requires scrap metal businesses to create and maintain certain records of purchase or receipt of metal property or other transactions related to metal property.
RI	HR5616/ SR854	Requests state to develop recommendations for establishing a comprehensive product stewardship approach to reducing environmental and health risks posed by the use or disposal of certain products.
TN	HR182	Creates a special house committee to study the ways and means to reducing the amount of waste disposed of in in-state landfills

TX	HB1935	Establishes programs that support adult and post-secondary education and workforce development in high-demand occupations and green-jobs, including recycling
VA	SJ345	Encourages state and local governmental entities to increase the usage of recycling receptacles at public places and governmental facilities
VA	HB1698	Prohibits the sale or purchase of any scrap metal unless the seller provides the proper documentation.
WA	HB1569	Authorizes a county to establish local public works assistance funds for funding public works projects such as solid waste and recycling facilities.
WA	HB2287	Requires state agencies to, by the close of 2009, purchase and use only 100-percent recycled white cut sheet bond paper. Also requires state agencies to, by July 1, 2010, implement paper conservation and recycling programs.

Transportation and Hauling

State	*Bill(s)*	*Description*
CA	SB230	Amends state's waste tire law by exempting from the waste and used tire hauler registration requirements a person transporting illegally dumped waste or used tires to an Amnesty Day event or an authorized location who has received written authorization

Appendix D. 2009-2010 South Carolina Recycling Legislation

Bill Number	Sponsor	Description	Link
Senate Bill 9	McConnell, Leventis, Rose, Elliot	Requires state agencies to become more energy efficient, purchase green power and buy compact fluorescent bulbs to replace incandescent ones	http://www.scstatehouse.gov/sess118_2009-2010/bills/9.htm
Senate Bill 88	Ford	Provides preference for environmentally preferable purchases by state agencies	http://www.scstatehouse.gov/sess118_2009-2010/bills/88.htm
Senate bill 131	Sheheen, Leventis	Electronics recycling bill featuring advanced recovery fees	http://www.scstatehouse.gov/sess118_2009-2010/bills/131.htm
Senate Bill 173	Cleary	ABC recycling requiring permitted facilities to recycle beverage containers sold for the purpose of on premise consumption	http://www.scstatehouse.gov/sess118_2009-2010/bills/173.htm
Senate Bill 184	McConnell	Scrap metal purchases require photo ID	http://www.scstatehouse.gov/sess118_2009-2010/bills/184.htm
House Bill 3153	Harrison, Daning	Vehicle scrap purchases require ID	http://www.scstatehouse.gov/sess118_2009-2010/bills/3153.htm
House Bill 3156	Brady	Provides preference for environmentally preferable purchases by state agencies	http://www.scstatehouse.gov/sess118_2009-2010/bills/3156.htm
House Bill 3160	Harrison, Battle	Unlawful to transport nonferrous metals under certain circumstances	http://www.scstatehouse.gov/sess118_2009-2010/bills/3160.htm
House Bill 3200	Funderbunk, Brady	Electronic recycling bill featuring manufacturer responsibility for electronics recycling in the state	http://www.scstatehouse.gov/sess118_2009-2010/bills/3200.htm
House Bill 4093	Loftis, Mitchell, H.B. Brown, Bedingfield, Anthony, G.A. Brown, Crawford, Dillard, Harvin, Hiott, Knight, Lowe, J.R. Smith, Toole, D.C. Moss, Sellers, Brady, Funderburk, Hodges, Horne, Gunn, Bowers, Hutto and Stavrinakis	Manufacturer Responsibility and Consumer Convenience Information Technology Equipment Collection and Recovery Act	http://www.scstatehouse.gov/sess118_2009-2010/bills/4093.htm
House Resolution 08-09	Pickens County Delegation	Support for recycling incentives by the General Assembly	http://www.co.pickens.sc.us/council/agendas/081215res0809.pdf

Appendix E. Major Recycling Legislation: North Carolina

Year	Bill Number	Description	Link
2005		An Act to require holders of certain ABC permits to recycle all recyclable containers of all beverages sold at retail on the premises and to prohibit the disposal of those containers in landfills or by incineration.	http://www.ncga.state.nc.us/enactedlegislation/sessionlaws/pdf/2005-2006/sl2005-348.pdf
2005	House Bill 1465		http://www.ncga.state.nc.us/Sessions/2005/Bills/House/PDF/H1465v0.pdf
2007	Senate Bill 1492 (Solid Waste Act of 2007)	Fundamentally altered Solid Waste permitting, Established permit fee, Instituted a $1 disposal tax	http://www.ncga.state.nc.us/Sessions/2007/Bills/Senate/PDF/S1492v7.pdf
2008	House Bill 819		http://www.ncga.state.nc.us/Sessions/2007/Bills/House/PDF/H819v5.pdf
2008	House Bill 1134		http://www.ncga.state.nc.us/Sessions/2007/Bills/House/PDF/H1134v9.pdf
2009	House Bill 1287	establish a program in cooperation with the Environment and Natural Resources Department of Administration for the collection and recycling of all used fluorescent lights and thermostats that contain mercury from State buildings.	http://www.ncleg.net/Sessions/2009/Bills/House/PDF/H1287v4.pdf

Appendix F. Major Recycling Legislation: Georgia

Year	Bill Number	Description	Link
2005	Senate Bill 122	Reauthorized $1 scrap tire management fee to be charged on the sale of every new passenger tire in the state. Fee proceeds are to be used to support the Solid Waste Trust Fund and are to be spent to cleanup illegal tire dumps, fund grants to local governments to advance scrap tire and solid waste management, and promote statewide recycling and waste reduction programs.	http://www.legis.state.ga.us/legis/2005_06/pdf/sb122.pdf
2006	House Bill 1320	Consolidated 25 different references to litter in the existing code into one comprehensive Litter Prevention and Abatement Act. The Act also considers littering a crime, not just an offense against the environment.	http://www.legis.state.ga.us/legis/2005_06/pdf/hb1320.pdf
2008	Senate Bill 154	Prevents cities or counties from invalidating solid waste collection contracts between private waste haulers and commercial entities in such cases as annexation, incorporation, deannexation, or franchising out for collection services. It still allows local governments to enact rules and regulations establishing standards for the collection and disposal of waste and recyclables generated by commercial entities.	http://www.legis.state.ga.us/legis/2007_08/pdf/sb154.pdf
2008	Senate Bill 399	Reauthorizes the fee for the Solid Waste Trust Fund for three years, until June 30, 2011. This fee is the source of funding for the state Solid Waste Trust Fund that is intended to assist local governments in cleaning abandoned landfills; taking emergency, preventative and corrective actions at solid waste and landfill facilities; funding solid waste reduction and recycling efforts; providing solid waste education and enforcement; and preventing litter.	http://www.legis.state.ga.us/legis/2007_08/pdf/sb399.pdf
2009	Senate Bill 82	Enhances several regulations on scrap metal sellers and recyclers, clarifying what type of photo ID the seller must provide the scrap metal purchaser; requiring that a photo be taken of the metal purchased; an oath from the seller that they are the owner or agent thereof; a vehicle title for vehicles sold; and that sellers of copper and aluminum property and catalytic converters be paid by a check made out to the person named on aforementioned ID. Cash payments can take place, but not until 24-hours following the transaction. This also increases penalties for metal theft.	http://www.legis.state.ga.us/legis/2009_10/pdf/sb82.pdf

Appendix G. Recycling Resource List From the 2009 Recycling Market Development Advisory Council Annual Report.

In addition to the South Carolina Department of Commerce Recycling Directory and the S.C. Smart Business Recycling Program, the following resources exist to assist businesses, industries and the public with waste reduction, reuse and recycling. These resources include, but are not limited to:

S.C. Materials Exchange – a free, web-based service that seeks to reduce waste by facilitating the exchange of reusable materials by businesses, non-profit institutions and government agencies. The Smart Business Recycling Program utilizes this tool to help encourage the reduction, reuse and recycling of materials and promotion of recycling markets. Recycling businesses, industry and individuals utilizing the exchange help increase the state's recycling rate and decrease the disposal rate. The exchange can be accessed at www.scdhec.gov/scme.

Index of Waste Minimization Resources – provides users of company by-products, waste minimization equipment, waste minimization programs and substitutes for hazardous materials. Visit www.scdhec.gov/environment/admin/CWM/wmindex/WmindexSearch.aspx to access the index.

South Carolina Green Building Directory – a free online tool of green building resources. The directory, established by the S.C. Sustainability Institute, provides information on products and services that support green building practices in the state. Commerce, DHEC and the S.C. Energy Office (EO) sponsored the development of the directory. The directory can be viewed at www.scgreenbuildingdirectory.org.

Carolina Recycling Association (CRA) – provides information on recycling markets and recycling centers. The CRA has several recycling councils and sponsors recycling workshops and webinars. In addition, the association hosts an annual recycling conference and trade show that rotates between N.C. and S.C. In 2009, the CRA held its 19th Annual Conference and Trade Show in Spartanburg, S.C. Staff participated on the conference planning committee, recommended conference sessions, recruited speakers, developed workshops, planned tours,

reviewed award nominations and helped publicize the event. Staff also moderated conference sessions and workshops. For more information on the CRA, visit www.cra-recycle.org.

S.C. State Agency Green Purchasing Initiative – promotes and advances green purchasing amongst state government agencies. Staff is actively involved in this initiative and helped developed an environmentally preferred purchasing policy and guide for recycled products for S.C. state agencies. Monthly meetings are held between Commerce, DHEC, SCEO, South Carolina Materials Management Office (MMO), S.C. Information Technology Management Office, S.C. Budget and Control Board, College of Charleston and Midlands Technical College. Staff helps promote environmental purchasing and recycled content products that help advance the S.C. recycling industry. Future workshops are planned to educate state procurement officers, vendors and other interested parties about the importance of environmental preferred purchasing. For more information on this initiative, visit www.mmo.sc.gov/MMO/MMO-index.phtm.

Solid Waste Association of North America (SWANA) – a solid waste professional organization that provides resources, professional development, certifications and networking opportunities. Its technical divisions include recycling and special waste, collection and transfer, waste-to-energy, and landfill gas. The S.C. Palmetto Chapter of SWANA recently received the "Largest Increase in Membership" and "Largest Percentage Increase in Memberships" awards at SWANA's national conference. It exceeded 46 other chapters to win both membership award categories. Ed Marr, president of the S.C. Palmetto Chapter, is also a member of RMDAC. For information on S.C. Palmetto Chapter of SWANA, visit www.scswana.org/index.cfm.

Green is Good for Business Conference – helps businesses understand the importance of sustainability and incorporate sustainable practices into their daily operations by featuring presentations on recycling and waste reduction, water and energy efficiency, green cleaning, green purchasing and many other topics. Staff presented information on recycling during the recycling and waste reduction session. The conference, held on September 1, 2009, was hosted by CPAC and DHEC. For more information about the Green is Good for Business Conference and CPAC, visit www.coccpac.com.

Appendix H. Advocacy Toolkit

General Tips for Contacting Public Officials

A. Be brief, clear, truthful, and factual.

B. It is important to try to reach out to elected officials in the most personal way possible. There are a number of contact possibilities including visits, phone calls, letters, e-mails, and faxes. First, however, it is important to educate and mobilize the people already committed to community recycling and have them help determine the target officials, the message, and the best way to promote the message.

C. Schedule time to communicate and develop relationships with key people. It takes time for them to become comfortable, open up, and develop trust. "Don't rush it."

D. Make the Recycling Industry a resource for public officials. Let them know they can come to the organization for information.

E. Do your homework before approaching the official. Know their general sentiments on issues that might relate to community recycling.

F. Show respect for public officials, the legislative process, and the complexities of the decisions that they face.

G. While a public official may not agree on a particular issue, they may be willing to work with you on another issue of common concern, if there is mutual respect. Burned bridges lead nowhere.

H. Where it seems appropriate, join with other people and organizations with similar interests in contacting officials.

I. Consider all of the decision-making stakeholders.

J. Advocacy always takes longer than anticipated

K. Again, be brief, clear, truthful, and factual.

Effective Letter Writing

A. Write letters before the decision has been rendered.

B. Send letters to all members of the legislative committee(s) unless specific members have been targeted.

C. Thank members if positive action is taken. They do remember!

D. Letter Format

1. Do not send form letters (the same letter with different signatures) to the same member.
2. Include your name and address on the envelope; include your name, address, phone, and e-mail address on the letter.
3. Invite letter recipient to contact you if they have questions or would like to discuss the issue further.
4. Make letter one page or less and cover only one issue in the letter but always include reasons and justifications for your position.

E. Letter Content

1. Refer to the bill number and its specific subject matter
2. Keep letter straightforward and to the point. They do not have time to 'study' every letter.
3. Tell them why you are writing and what you want them to do.
4. Explain how and why community recycling is or will be affected by the action, lack of action, proposal, etc.
5. Be honest and accurate with the facts….or do not use them.
6. If you have supporting information, attach it. Not everything can be incorporated into the letter.
7. Encourage others, particularly those desiring similar objectives but coming from a different perspective, to write letters.

Op-Eds or Letters to the Editor

A. Write op-eds and letters to the editor in local, regional, and national publications. Op-eds raise awareness and educate on an issue. Op-eds bring attention to the Recycling Industry as an information resource.

B. General guidelines:

1. Know the news source's timelines, particularly if timing on getting the word out is important. Papers may take weeks before they publish an op-ed.
2. Be clear and keep to a maximum of 500-800 words for op-eds. Keep letters to the point. Whether you are submitting an op-ed or a letter to the editor, check the specific newspaper's publishing guidelines.
3. Suggest a headline and a byline along with a one sentence bio of the author.
4. The reader generally knows less than the author. At the same time, assume they are smart but not knowledgeable about your subject. Stay away from professional jargon.
5. Try to engage the reader early on and keep them engaged throughout the article.
6. Use examples and statistics. Let the reader know why this information is relative to them.
7. Most newspapers will not print letters without your name. They also may want to confirm that you are the writer. Include your address, e-mail, and phone contact information.

Ask others to read and proof your piece for clarity and typos.

Appendix I. Case Studies

Comprehensive

Owen Sound, Ontario

Owen sound has implemented one of the most comprehensive recycling programs in Canada. Over 30 items are recycled at the curb, including Tupperware, metal pots and pans, cutlery and kitchen utensils and a wide range of plastic containers. The city runs a biweekly reclycling program, with the corrugated cardboard collected weekly in the downtown core and monthly throughout the rest of the city. The city has implemented the following forms of policy and legislation:

- *Pay-As-You-Throw:* requires all residents to attach $2 tags to all bags of garbage set out at the curb.
- *Limited Waste Disposal:* Switched from weekly to biweekly garbage collection in July 2009, and households can set out a maximum of four bags of garbage at any one time.
- *Mandatory Recycling:* City implemented a mandatory recycling bylaw. Garbage bags containing recyclables are left at the curb with tags attached to notify the resident about the bylaw.
- *Landfill Bans:* a bylaw oprohibits landfill disposal of blue –box recyclable material, used electronic waste, household hazardous waste, and leaf and yard waste.
- *Audits:* city businesses must submit audit reports and waste reduction plans.

The city runs consumer awareness programs to encourage residents to reduce their generation of waste by using reusable bags and containers, purchasing goods in bulk and buying goods with less packaging. In addition, the city runs two “goods exchange days” per year. Residents are encouraged to set out their reusable items at the curb on these days for other residents to pick up (FCM Green Municipal Fund, 2009).

Incentives

Archdale, North Carolina – Recycling Rewards Program

This program is open to legal residents of the City of Archdale, 18-years and older who have a recycling cart. All cart serial numbers are entered automatically and drawn at random. Four serial numbers are drawn per month. A primary number and an alternate number are drawn for two areas of the city. The corresponding recycling carts are then inspected.

Citizens who follow the guidelines, which are printed on the top of their green recycle carts, are eligible to win a $100 cash prize. If the primary cart is disqualified then the alternate cart will be inspected. If the alternate cart is disqualified then there will be no winner for that time period.

Prizes are awarded at the City Council Meeting on the month of the drawing. Each winners name is posted on the City of Archdale's website and in the newspaper. (Archdale North Carolina, 2010)

Asheville, North Carolina

Along with Curbside Management Inc., the city of Asheville has sponsored the "Feed the Bin and Win" contest which gave away $100 a week for 16 weeks. Residents served by the city's curbside recycling program were eligible for the contest and were entered by submitting a completed enrollment card. Each week, one enrollemtn card was randomly drawn. If the selected household had set out its recyclables and met the recycling guidelines, the resident won $100 (RE3.org, 2008).

Hamilton, Ontario

The city currently provides waste collection services for garbage and recycling to 90% of multi-family facilities including condominiums, townhouses and apartments. The city has provided greent cart service to about 900 multi-residential buildings with approximately 30,000 of the city's 53,000 multi-residentiaal units now reciveing full waste collection services. All residences must participate in the city's recycling program. If the owner of a multi-family building

does not provide a recycling program to tenants then the city will sent a latter citing the city's recycling bylaw and identify a date on which garbage services will be suspended until the building owner impliments a d recycling program. Hamilton has been a strong supporter of social marketing strategies to promote waste diversion. Programs have included a student "Green Team outreach initiative for the household organics collection program and the Gold Box reward and Recognition Program, which recognizes houeholds that reach and exceed the goal of 65 percent waste diversion. The city picks winneers by drawing residents name from submitted ballots and auditing their houshold waste, recyclables and sourece-seperated organics. The city provides bule tote bags to all apartment owners and tenants for storage of reclables in their apartment units and holds open houses to educate tennants. A reductionion in truck emmissions has been seen due to the fact that organics and garbage are collected simultaneously (FCM Green Municipal Fund, 2009, p. 10).

Mandates

Cambridge, Massachusetts

Massachusetts prohibits the disposal of lead-acid batteries, white goods, whole tires, leaves, yard waste, glass, metal and plastic containers, recyclable paper, and cathode ray tubes in landfills or combustion facilities. There is no statewide mandatory recycling law, but 168 of 35 municipalities have mandatory recycling ordinances, bylaws or regulations as of March 2000. Cambridge, Massachusetts adopted a mandatory recycling ordinance in 1991. The ordinance requires businesses and institutions to conduct a waste audit and source-separate for recycling any material that constitutes more than 5 percent of their refuse. Businesses must develop and file a recycling plan for those items in excess of 5 percent. (McGuire, 2002)

Chicago, Illinois

Chicago's City Council adopted the Workplace and Residential Recycling Ordinance in 1994, requiring all property managers and building owners to implement an effective recycling program. Businesses are required to source-separate three recyclable materials or source-separate two recyclable materials and conduct two source reduction measures. Source reduction measures include

double-side copying, reducing packaging, energy efficient light bulbs, and reusing supplies. Businesses must also develop an education program and a written recycling plan. (McGuire, 2002)

Dane County, Wisconsin

Under the state's comprehensive recycling law, SB 300 enacted in 1990, the state bans lead acid batteries, tires, yard waste, major appliances, motor oil, newspaper, magazines, corrugated, office paper, glass, aluminum cans, bimetal cans, plastic containers, and polystyrene (PS) foam from landfill disposal. The ban required cities, towns and villages to adopt a mandatory recycling ordinance that requires the recycling of specific materials. Counties were allowed to take over the implementation of recycling systems if given approval by their cities, villages and towns. Dane County dictates that in order to use the county-owned landfill municipalities must implement source separation and mandatory recycling of specific items for all generators. Since 1987, the county gradually added specific materials that are required to be recycled including newspapers, yard waste, corrugated cardboard, steel cans, aluminum cans, glass bottles and jars, plastic bottles, used oil, lead-acid batteries, appliances, magazines, office paper, and tires. (McGuire, 2002)

Monmouth County New Jersey

Monmouth County formally adopted its initial District Recycling Plan in February 1987, two months before the Statewide Mandatory Source Separation and Recycling Act was signed into law. The statewide act requires each municipality to source-separate and recycle at least three materials in addition to leaves. The county's program goes beyond the basic requirements of the state's mandate and requires the recycling of additional materials. The county evaluated the waste stream to determine what materials would be mandated. Required recycling materials include newspaper, glass, aluminum, leaves, bimetal food and beverage cans, high-grade paper corrugated cardboard, asphalt, concrete, and certain wood wastes. (McGuire, 2002)

Onondaga County, New York

New York State's Solid Waste and Management Act of 1988 required municipalities to adopt ordinances that require source separation for residential and commercial waste streams by September 1, 1992. The act mandates municipalities require the separation of those materials for which the cost of recycling is less than or equal to the costs of proper disposal at a solid waste facility. Ononodaga County implemented a Source Separation Law in 1990 that requires households and businesses to recycle corrugated cardboard and paper, glass, metal, newspapers, magazines, plastics, beverage cartons, and paperboard if the quantity generated economically justifies a separate collection. Waste audits are conducted at businesses to determine which materials they will be required to recycle. (McGuire, 2002)

San Diego County, California

In 1991, the San Diego County Board of Supervisors adopted a mandatory recycling ordinance (MRO). The MRO requires designated recyclables be source-separated. Each city was required to adopt an MRO of its own. The county introduced surcharges in phases to a maximum of $100 per load of solid waste to a county landfill. The MRO includes enforcement by disposal bans on specific materials at county-owned landfills. Required recycling materials include newspaper, metals, glass, bimetal cans aluminum, corrugated cardboard, tin, magazines, high-grade office paper, yard debris, white goods, asphalt, concrete, land-clearing debris, sand, and rock. (McGuire, 2002)

Santa Monica, California

Santa Monica's Construction and Material Waste Recycling Ordinance requires all construction and demolition projects that fall under specified thresholds to divert at least 60 percent of their construction and demolition waste. Applicants are required to submit a Waste Management Plan and a deposit of three percent of the total project cost. The deposit is refunded with documentation that materials have been recycled. (McGuire, 2002)

Victoriaville, Quebec

Victoriaville offers a three-stream waste management system for all residential households. Participants receive a black 360-liter cart for garbage, a green 360-liter cart for recyclables, and a brown 360-liter cart and seven-liter countertop container for organics. The city's food waste collection and composting service is optional for residents because some residents indicated that they did not have storage space for a third bin. However, there is a participation rate of 80%. (FCM Green Municipal Fund, 2009)

Organizations

WRAP – Waste and Resources Action Program

(WRAP) helps individuals, businesses and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change. Established as a not-for-profit company in 2000, WRAP is backed by government funding from England, Scotland, Wales and Northern Ireland. WRAP's vision is a world without waste, where resources are used sustainably. WRAP works with businesses and individuals to help them reap the benefits of reducing waste, develop sustainable products and use resources in an efficient way. WRAP's aim is to create the case for change, support change and deliver change.
By focusing on four priorities, and working with partners, WRAP aims to divert 8 million tons of waste materials from landfills, save 5 million tons of CO_2 equivalent emissions and generate 1.1 billion (pounds) of economic benefits to business, local authorities and consumers.

The four priorities

- Packaging (The manufacture and disposal of packaging is of great concern to consumers and policy makers alike.)
- Food Waste (Every ton of food waste prevented has the potential to save 4.5 tons of CO_2 equivalent.)
- Collection Systems (To help local authorities maximize the potential of a well designed collection system to meet recycling targets and respond to the demands of the public.)
- Quality of Materials (Continue working on benchmarking the costs and efficiency of local authority recycling collection systems.) (WRAP UK, 2010)

South Carolina Business

Nine Lives Mattress Recycling

Reacting to the need for a more efficient method of recycling components of mattresses and box springs, Nine Lives Mattress Recycling in Pamplico, SC has responded in order to save landfill space for South Carolina communities. Nine Lives Mattress Recycling began recycling mattresses in 2006 when Ralph Bogan diagnosed mattresses effects on our state landfills and committed his personal funds. Nine Lives Mattress Recycling manually deconstructs mattresses and box springs, separating their materials for recycling. In 2007, Nine Lives Mattress Recycling recycled 126 tons of mattresses and box springs. Of the 5000 units recycled, approximately 33 tons of metal, 17 tons of cotton, 20 tons of wood, 15 tons of foam, 20 tons of poly-pad and 21 tons of waste were saved from our state landfills.

The average mattress takes up 23 cubic feet of landfill space. In 2007, Nine Lives Mattress Recycling saved 115,000 cubic feet of landfill space, which equals 4259.25 cubic yards. Based on a $40.00 tipping fee at the landfill, each compacted cubic yard is worth approximately $10.00 per cubic yard without mattresses. That same space is worth only $1.00 per cubic yard with mattresses. Without mattresses, each compacted cubic yard weighs between 1500 and 1800 pounds. A cubic yard of compacted mattresses weighs around 250 pounds. Mattresses do not compact. Nine Lives Mattress Recycling saved local area landfills approximately $115,592.15 worth of landfill space in 2007. (Nine Lives Mattress Recycling, 2008)

State Disposal Fees

Alabama MSW Disposal Fee

Alabama House Bill 395 imposes a $1.00/ton fee on MSW disposed in Alabama as well as a $1.00/ton or $0.25/cy on C/D, industrial wastes. The fee was established to provide stable funding for ADEM Solid Waste program. It allows for the establishment of a grants program to encourage local recycling efforts, provide fiscal resources to clean-up unauthorized dumps, and establish a statewide waste reduction and recycling goal. The disposal fee does not apply to recycled, reused or recovered materials, but does apply to all solid wastes disposed of in Alabama landfills regardless of whether the waste is subject to any other disposal fees.

The disposal fee will generate an estimated $7.6 million based on 2007 reported disposal volumes, which would allocate the following initiatives:

- $3.4 M (45%) for Alabama Department of Environmental Management Solid Waste regulation, education and outreach.
- $1.9 M (25%) to establish and enhance local recycling programs
- $1.9 M (25%) to clean-up UADs for innocent landowners
- $380 k (5%) to operators and for administrative costs

The fee will also provide grants to local governments and governmental non-profits to develop implement and enhance recycling and waste minimization projects (Alabama Department of Environmental Management, 2009).

Georgia Comprehensive Solid Waste Management Act

In 1990, the Georgia General Assembly passed the Georgia Comprehensive Solid Waste Management Act, which set a path toward improved solid waste management in the state. The act imposed a local user fees of $1 per ton of solid waste, paid to host local government of solid waste management facility) to offset local government solid waste management costs.

"Effective January 1, 1992, when a municipal solid waste disposal facility is operated by private enterprise, the host local government is authorized and required to impose a surcharge of $1.00 per ton or volume equivalent in addition to any other negotiated charges or fees which shall be imposed by and paid to the host local government for the facility and shall be used to offset the impact of the facility, public education efforts for solid waste management, the cost of solid waste management, and the administration of the local or regional solid waste management plan; provided, however, that such surcharges may be used for other governmental expenses to the extent not required to meet the above or other solid waste management needs."

Illinois Solid Waste Planning and Recycling Act

The Solid Waste Planning and Recycling Act requires all Illinois counties to work individually or in municipal joint action agencies to adopt and implement 20 year waste management plans. Plans must be reviewed every five years to identify changes and to evaluate progress.

Illinois imposes a $2/ton state surcharge on waste that is disposed in Illinois landfills. Landfills are required to quarterly pay annual fees to the state. Landfills receiving greater than 150,000 cubic yards per year pay $2/ton or $.95/cubic yard. Smaller landfills receiving between 100,000 and 150,000 cubic yards per year pay a flat fee of $52,630, between 50,000 and 100,000 pay a flat fee of $7,260 and less than 10,000 pay a flat fee of $1,050.

The fund helps pay for Household Hazardous Waste Collection programs and staff salaries at Illinois EPA offices as well as recycling grant programs at the Illinois Department of Commerce and Economic Opportunity.

Kentucky Pride Fund

A trust fund known as the Kentucky pride fund is hereby established in the State Treasury to receive money collected from environmental remediation fees. An "Environmental remediation fee" of one dollar and seventy-five cents ($1.75) fee paid per ton of waste by generators of waste and collected at transfer stations and waste disposal facilities that is in addition to all other applicable fees and taxes assessed prior to January 1, 2003 will be implemented throughout Kentucky. The proceeds from the fee will be used for state grants, litter abatement and waste clean-up.

Clean Michigan Fund and Solid Waste Policy

A 1985 Executive Order established the Clean Michigan Fund Advisory Committee with $10 million to fund recycling programs.

A $.21 cent/ton tipping fee was implemented to fund the program. Although there is no mandatory recycling in the state, Michigan has a mandatory bottle deposit law. The state has disbursed approximately 100 million in recycling grants.

In 2009 a bill was introduced that would increase the state per ton tipping fee to $7.50 cents, but as of 8/2/2010 had not been passed.

Minnesota comprehensive Waste Reduction and Recycling

In 1989, the Governor of Minnesota's Select Committee on Recycling and the Environment (SCORE) made policy recommendations for comprehensive waste reduction and recycling. The recommendations resulted in the institution of a statewide Solid Waste Management Tax (SWM Tax) based on a percentage of the sales price of MSW services including:

- A 17% Commercial SWM tax
- A 9.75% Residential SWM tax
- And an Industrial, Demolition and Medical Waste SWM tax at 60 cents per cubic yard disposed

50% of the SWM tax is used for solid waste (including SCORE grants) another 50% is directed to a general fund.

On top of this, a Metropolitan Solid Waste Landfill Fee at $6.66/ton was collected on garbage deposited at Metro-area landfills.

The Greater Minnesota Clean Up Fee requires facility operators to charge the same $6.66/ton and remit the funds to counties in non-metropolitan areas.

As well, Counties (other than Metro-area counties) may charge up to $24.98/ton on out of county waste and up to $1.67/cubic yard for construction and demolition waste.

Cities and towns have the authority to collect fees to pay for solid waste services and may impose fees up to $3.33/ton on operators of solid waste facilities.

Nebraska Landfill Disposal Fee

The Nebraska Landfill Disposal Fee established a fee of $1.25 per-ton-fee assessed on all waste disposed in municipal solid waste landfills.

The fee is divided in equal parts to be used for the following:

- Fifty percent goes to DEQ's Waste Reduction and Recycling Grants Program as a source of grants for local recycling and waste reduction projects.
- Fifty percent is used to support the operating costs of the Integrated Waste Management program (Nebrask Department of Environmental Quality).

New Jersey Recycling Tax

In 2008, the New Jersey State Assembly authorized a Recycling Tax upon the owner or operator of every solid waste facility of $3.00 per ton on all solid waste accepted for disposal or transfer at the solid waste facility. Moneys generated from the tax are to be used to fund the following:

- Minimum 60% of the estimated annual balance shall be used for the annual expenses of a program for direct recycling grants to municipalities or counties in those instances where a county, at its own expense, provides for the collection, processing and marketing of recyclable materials on a regional basis.

- 5% of the estimated annual balance of the fund shall be used for State recycling program planning and program funding, including the administrative expenses.

- 25% of the estimated annual balance of the fund shall be used to provide State aid to counties for preparing, revising, and implementing solid waste management plans, including the implementation of the goals of the State Recycling Plan.

- 5% of the estimated annual balance of the fund shall be used by counties for public information and education programs concerning recycling activities

- Maximum 5% of the estimated annual balance of the fund shall be used by the department to provide grants to institutions of higher education [to conduct research in] for recycling demonstration, research or education, including professional training (New Jersey State Legislature).

North Carolina Solid Waste Disposal Tax

The North Carolina State Excise Tax came into effect on July 1, 2008. Administered by the North Carolina Department of Revenue the tax charges a $2 per ton fee on all waste coming into MSW and C&D landfills and transfer stations that send waste out of state. Proceeds from the tax will be used to benefit the following:

- 37.5% will go to *cities* and *counties* on a per capita basis. 18.75% will be distributed to cities and 18.75% will be distributed to counties. A city or county is excluded from the distribution if it does not provide solid waste management programs and services and is not responsible by contract for payment of the programs and services, unless it is served by a regional solid waste management authority. A city or county that receives funds and is served by a regional solid waste management authority must forward the amount it receives to that authority.

- 12.5% will go to the *Solid Waste Management Trust Fund*. DENR has advised that the majority of this Fund is reallocated to local governments for recycling programs.

- 50% will go to the *Inactive Hazardous Sites Cleanup Fund* to fund the assessment and remediation of pre-1983 landfills.

North Carolina's DENR has advised that it will retain 4.375% of the revenue, to be used for staffing purposes. DENR expects to generate close to $24,000,000 annually (North Carolina Department of Revenue, 2008).

Ohio Solid Waste Disposal Fee

Effective August 1, 2009 Ohio's Municipal Solid Waste Disposal Fee is $4.75 per ton, regardless of the origin of the waste.

- One dollar of the fee goes to fund state hazardous waste cleanup activities.
- One dollar per ton funds Ohio EPA's solid waste, infectious waste and construction demolition debris regulatory programs.
- The remaining $2.50 per ton goes into Ohio's Environmental Protection Fund

- .25 cents of the fee will be used to fund soil and water conservation programs through the Ohio Department of Natural Resources.

Pennsylvania Municipal Waste Planning, Recycling and Waste Reduction Act

Pennsylvania's Act 101, authorized in July of 1988 established, among other initiatives, a $2per-ton fee on municipal waste entering landfills and resource recovery facilities. Monies generated by the Recycling Fee are deposited in the Act 101 Recycling Fund, which is allocated to the following:

- Minimum 70% for grants, studies and research to support recycling, market development and waste reduction
- Maximum 30% for public information programs and technical assistance
- Maximum 10% for processing and disposal feasibility studies
- Maximum 3% for Fund administration

Act 101 mandates recycling in Pennsylvania`s larger municipalities, requires counties to develop municipal waste management plans, and provides for grants to offset expenses. The goals of the Act are to reduce Pennsylvania`s municipal waste generation; recycle at least 25% of waste generated; procure and use recycled and recyclable materials in state governmental agencies; and educate the public as to the benefits of recycling and waste reduction. The benefits of recycling and waste reduction include reduced pollution risks; conservation of natural resources, energy and landfill space; and reduced disposal costs.
Grants supported by the Act include:

- PLANNING GRANTS: Counties are reimbursed for 80% of approved costs to prepare municipal waste management plans and related studies.
- RECYCLING GRANTS: Counties and municipalities are reimbursed for 90% of approved costs to establish municipal recycling programs. Municipalities defined as financially distressed under Act 47 of 1987 may receive funding for 100% of approved costs.
- RECYCLING COORDINATOR GRANTS: Counties are reimbursed up to 50% of approved salary and expenses for a county recycling coordinator.
- RECYCLING PERFORMANCE GRANTS: Municipalities are awarded these grants for their recycling programs. The amount of the grant is based on

type and weight of materials recycled and on the percentage of recyclables diverted from landfilling and incineration.

- HOST MUNICIPALITY INSPECTOR GRANTS: A host municipality is awarded 50% of the approved costs of employing a certified host municipality inspector for landfills and resource recovery facilities. Training of inspectors is also available under this grant program.
- INDEPENDENT PERMIT APPLICATION REVIEW GRANTS: A municipality may be reimbursed up to $10,000 for each review by a professional engineer of a waste management facility`s permit application.
- HOUSEHOLD HAZARDOUS WASTE COLLECTION AND DISPOSAL GRANTS: Municipalities and counties that establish HHW collection programs may be reimbursed up to 50% of approved costs for collection programs. This cannot exceed $100,000 (Pennsylvania Department of Environmental Protection).

Wisconsin Waste Reduction and Recycling Law

The Wisconsin Waste Reduction and Recycling Law of 1990 was applied to implement effective recycling programs. The State employed a 3% Recycling Surcharge on a business's gross tax. As well, the state added a $3/ton Recycling Tipping Fee on all solid Waste disposed in Wisconsin landfills except high volume industrial waste. Another 81 cents/ton is applied toward environmental fees. In fiscal year 2003-2004, the state collected $25.5 million in recycling surcharge taxes and another $19.9 million in tipping fees.

Wisconsin raised their tipping fee to $12.997 beginning Oct. 1, 2009.

Waste Diversion

Ottawa, Ontario – Take It Back! Program

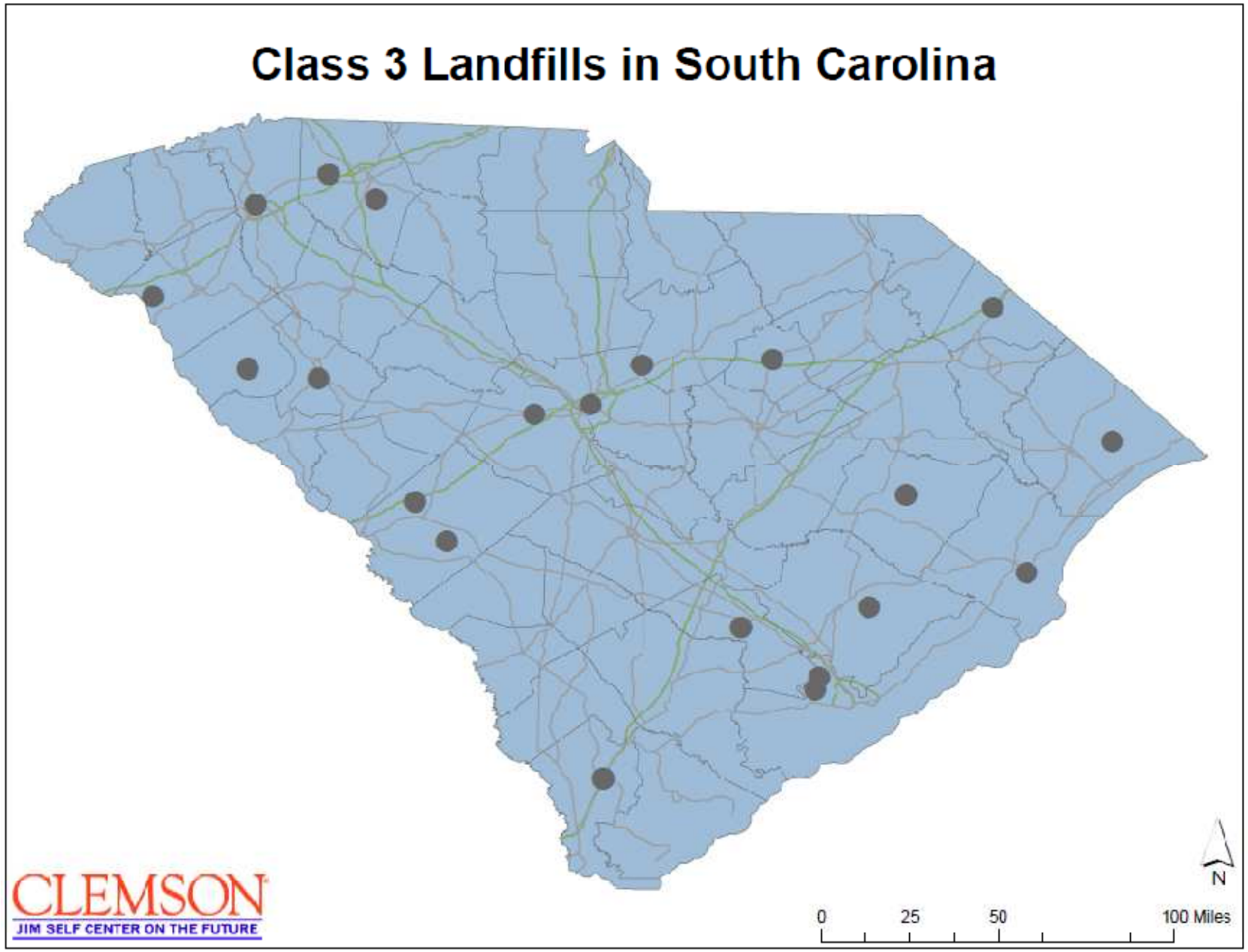
Ottawa's Take it Back! program encourages local businesses to "take back" many of the household materials that they sell, and to ensure they are reused, recycled or disposed of properly. This program provides a convenient and safe way for residents of Ottawa, to return household items that should not go in the garbage, to participating retailers and charitable organizations. As well, the program has become an alternative to the residential recycling boxes and Household

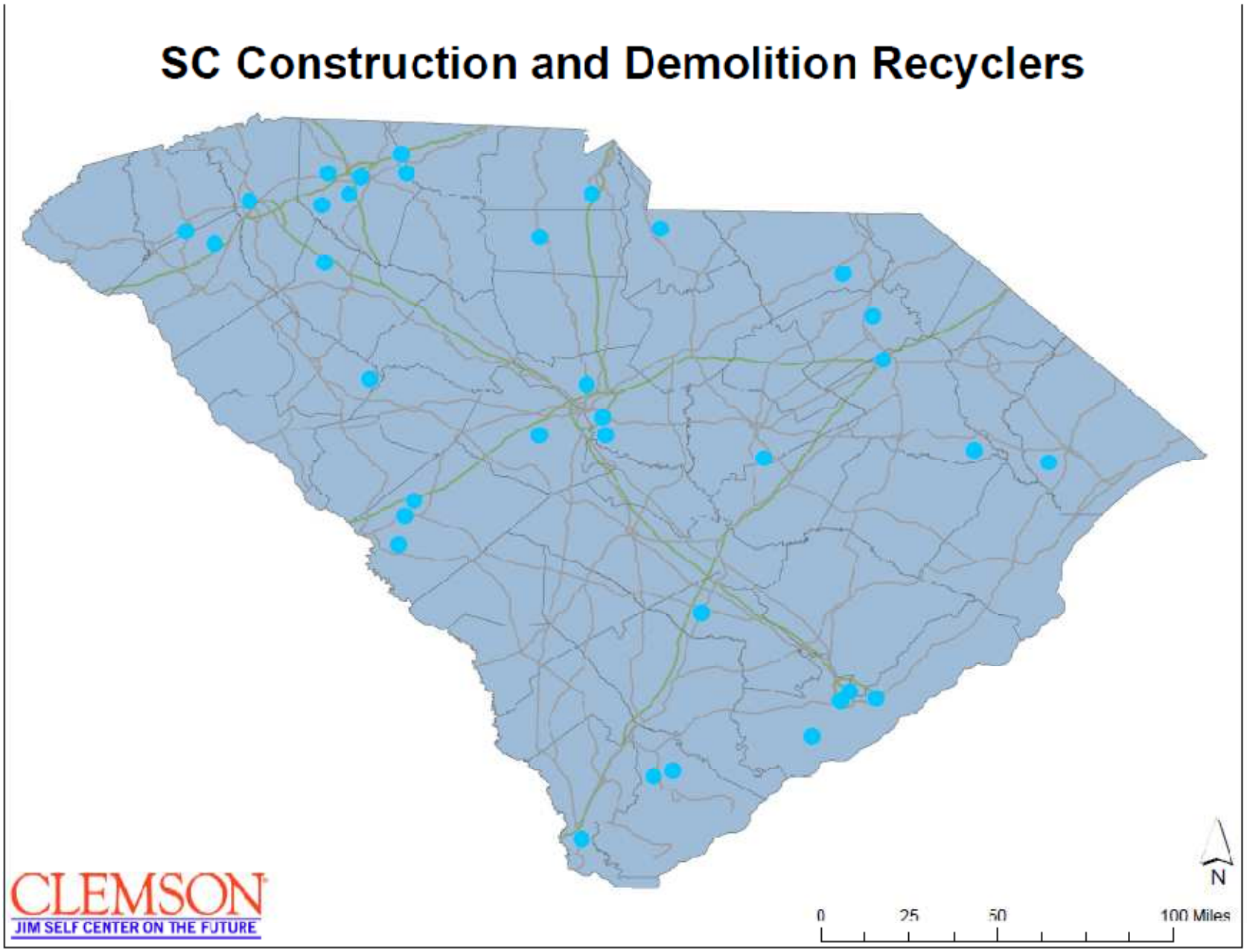
Hazardous Waste depots. For example, used motor oil, which is accepted at City-run Household Hazardous Waste depots, can be conveniently brought back to many gas stations, garages and car dealerships listed in the program.

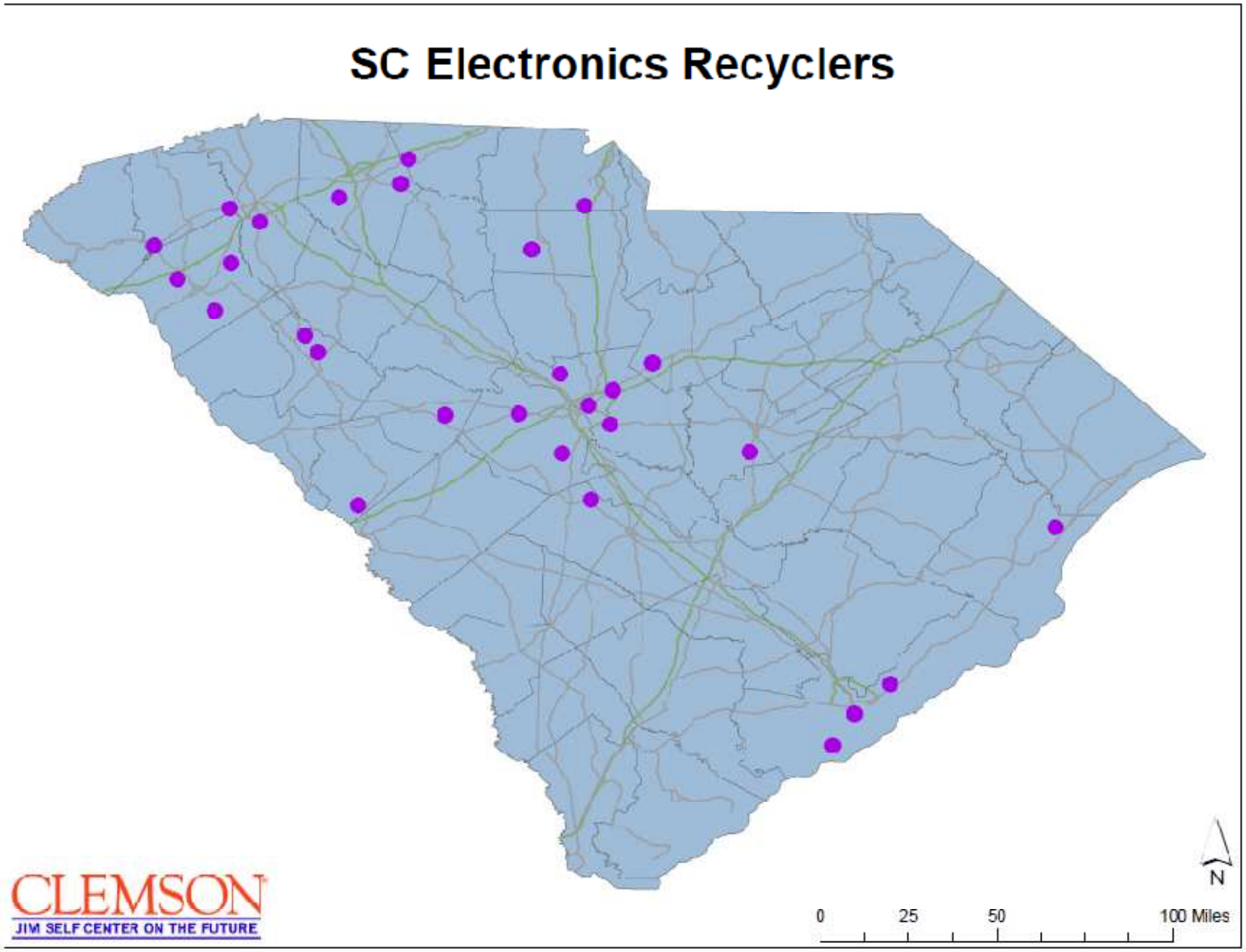
Other examples of materials that can be returned through the Take it Back! program include: anti-freeze, cell phones, tires, clothing, small appliances, flower pots, needles and syringes, eyeglasses, clothes hangers, rechargeable batteries and more.

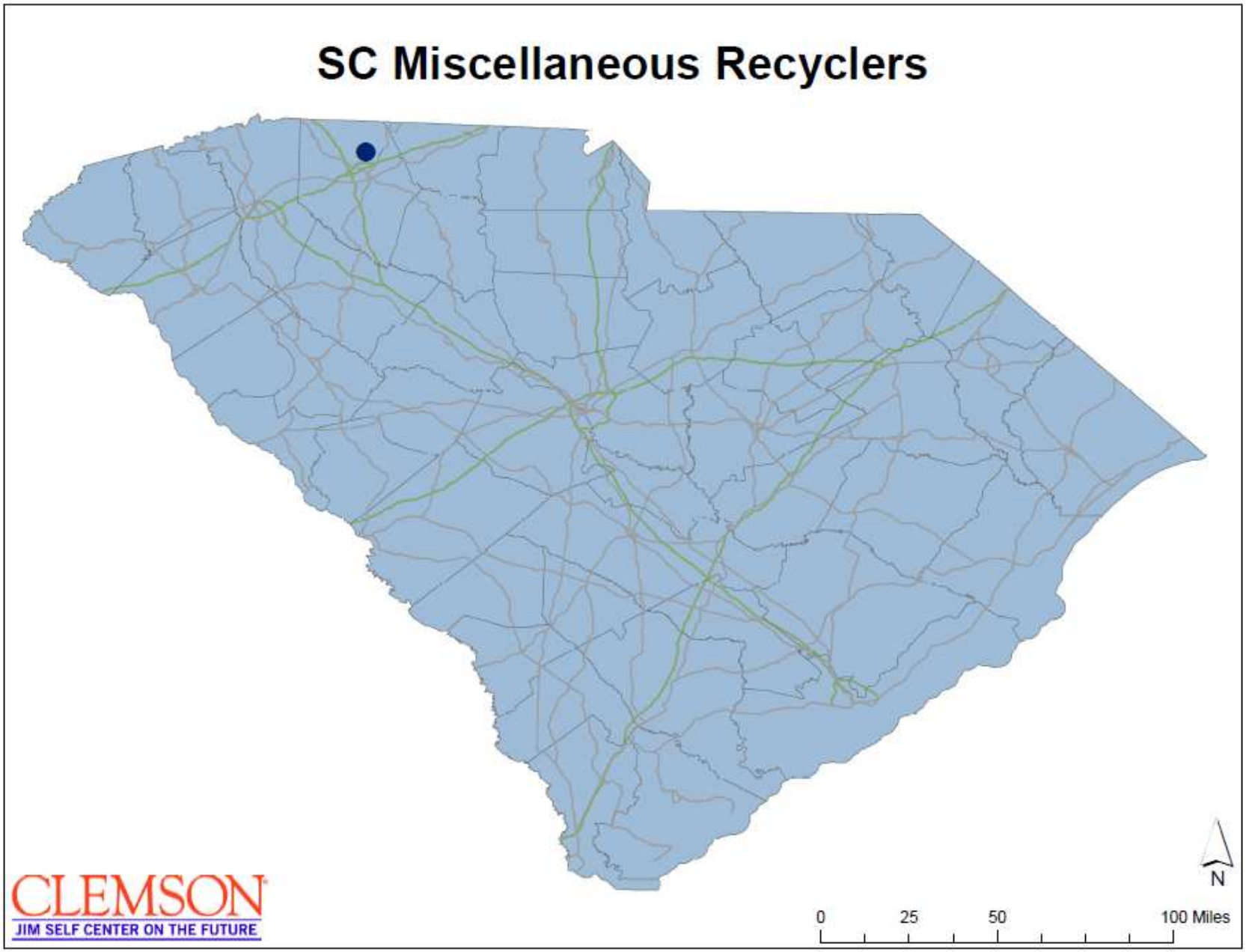
Take it Back! partner retailers, charitable organizations and depots are listed in an annual directory and on the City's website at ottawa.ca/takeitback. The directories are available at City Hall, all Client Service Centers, libraries, community centers and some retail locations.
Since its inception, the Take it Back! program has grown from three automotive products taken back by 16 automotive retailers in 1997, to more than 130 different products taken back by over 590 retailers and charitable organizations in 2009. Each year Take It Back! partners divert over 500 tons of material from the municipal landfill.

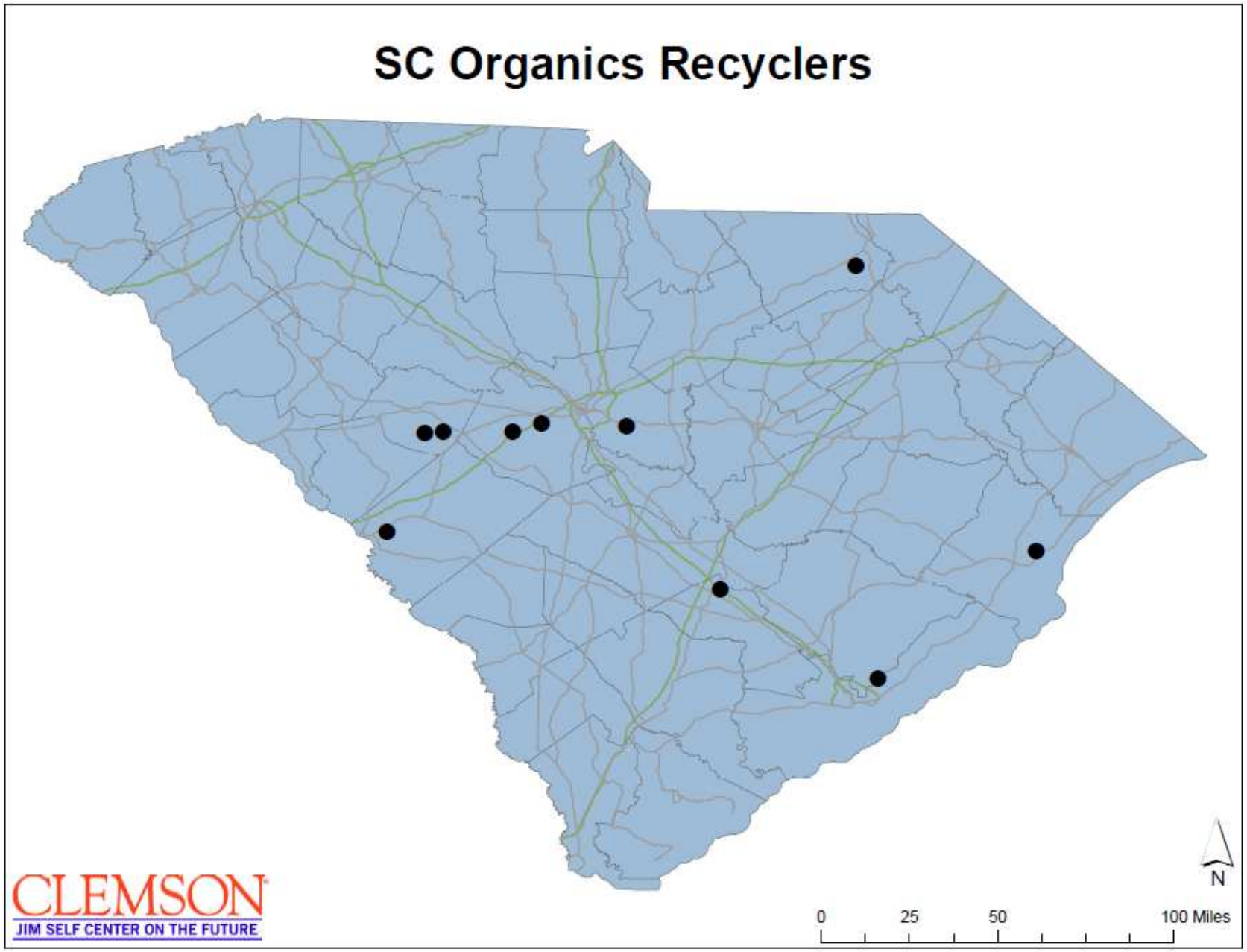
Appendix J. Maps

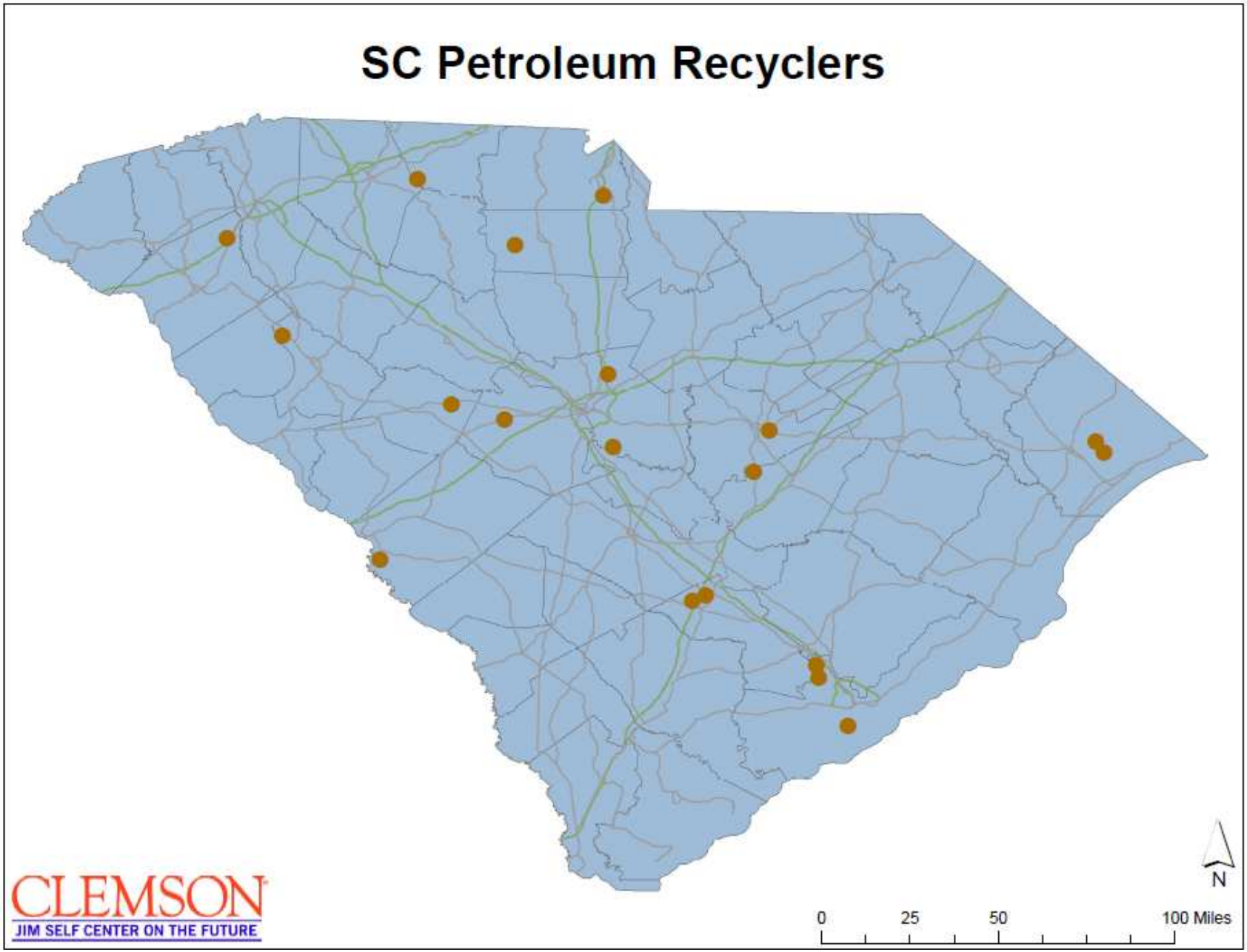

Class 3 Landfills in South Carolina
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
25
50
100 Miles

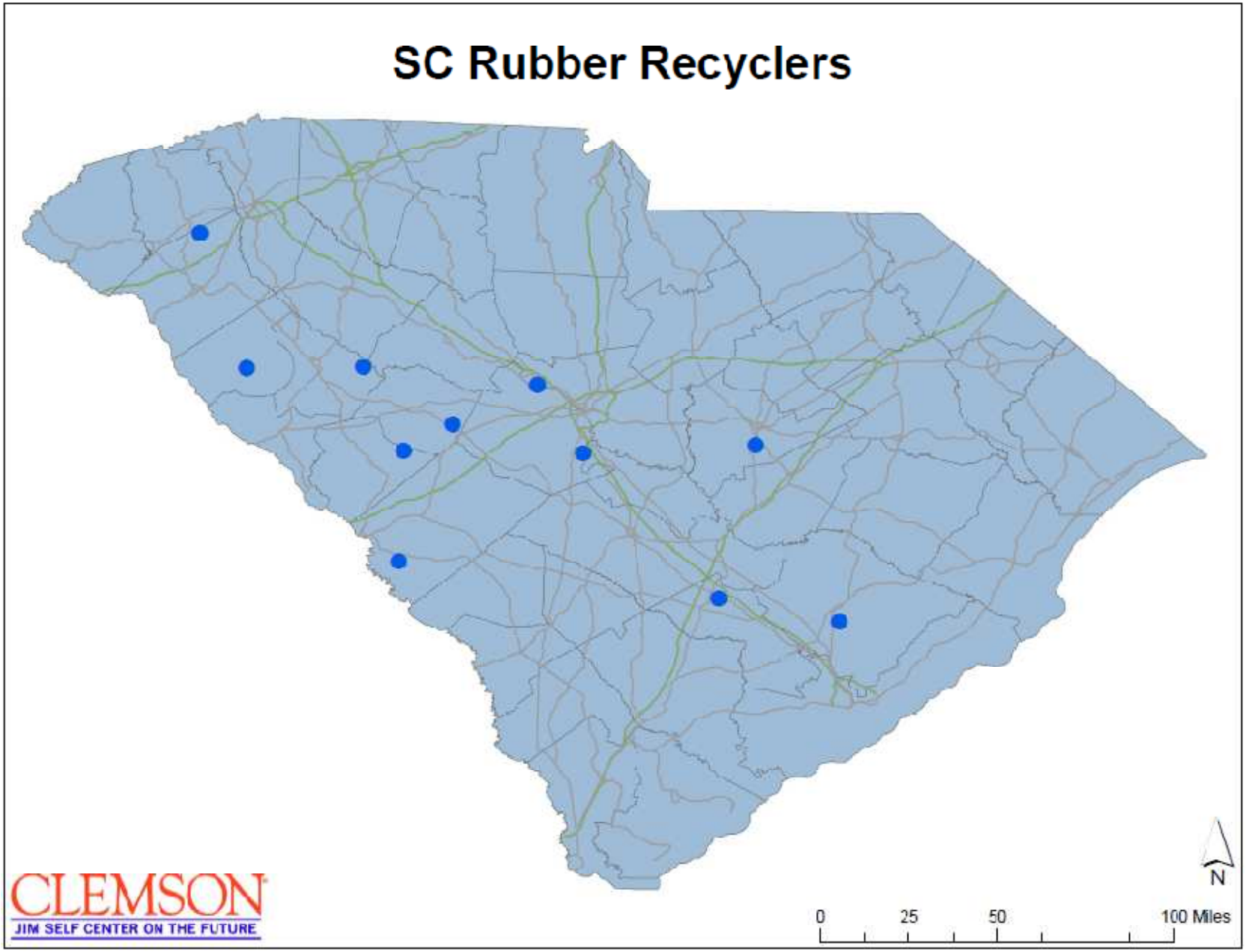

SC Construction and Demolition Recyclers
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
25
50
100 Miles

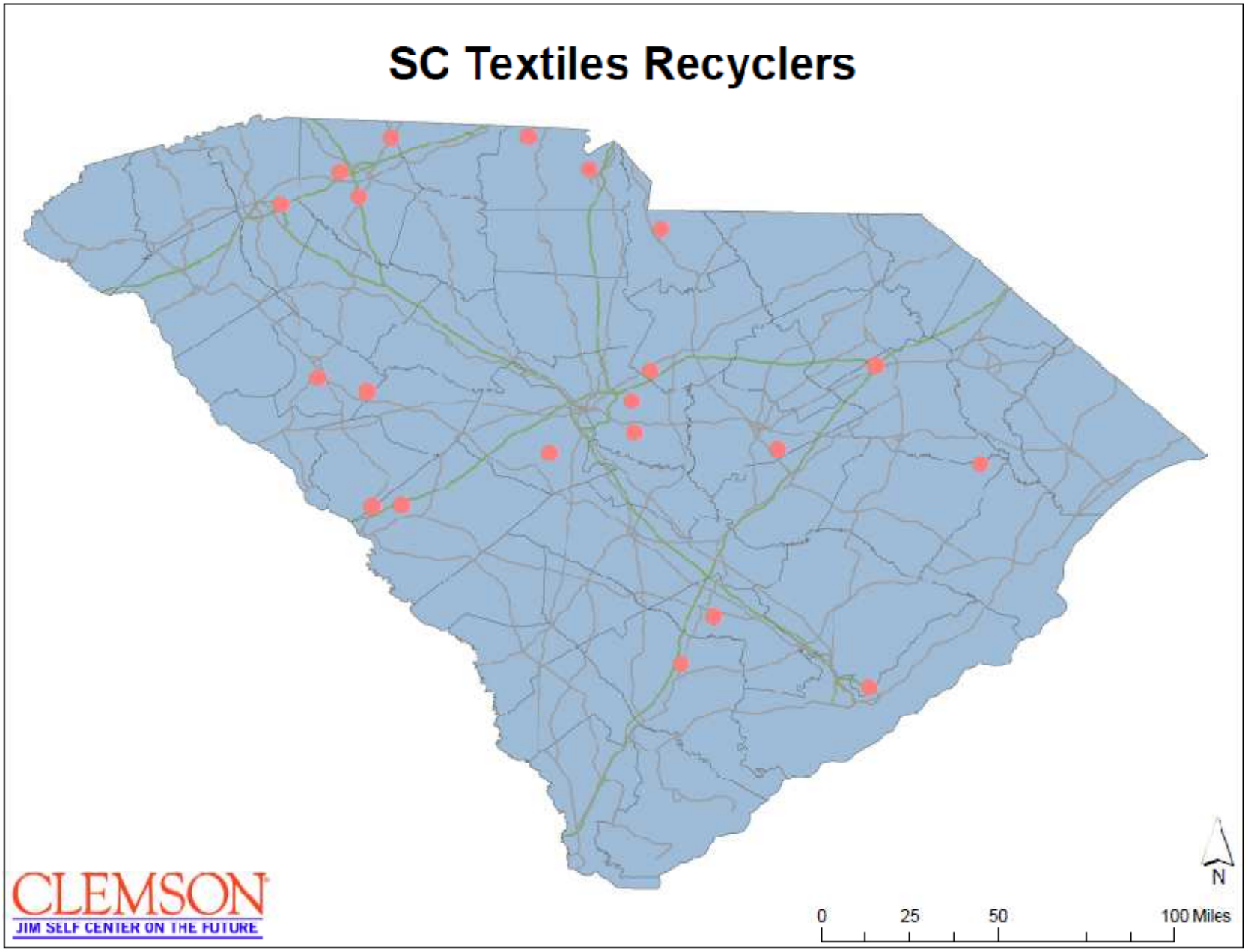

SC Electronics Recyclers
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
25
50
100 Miles

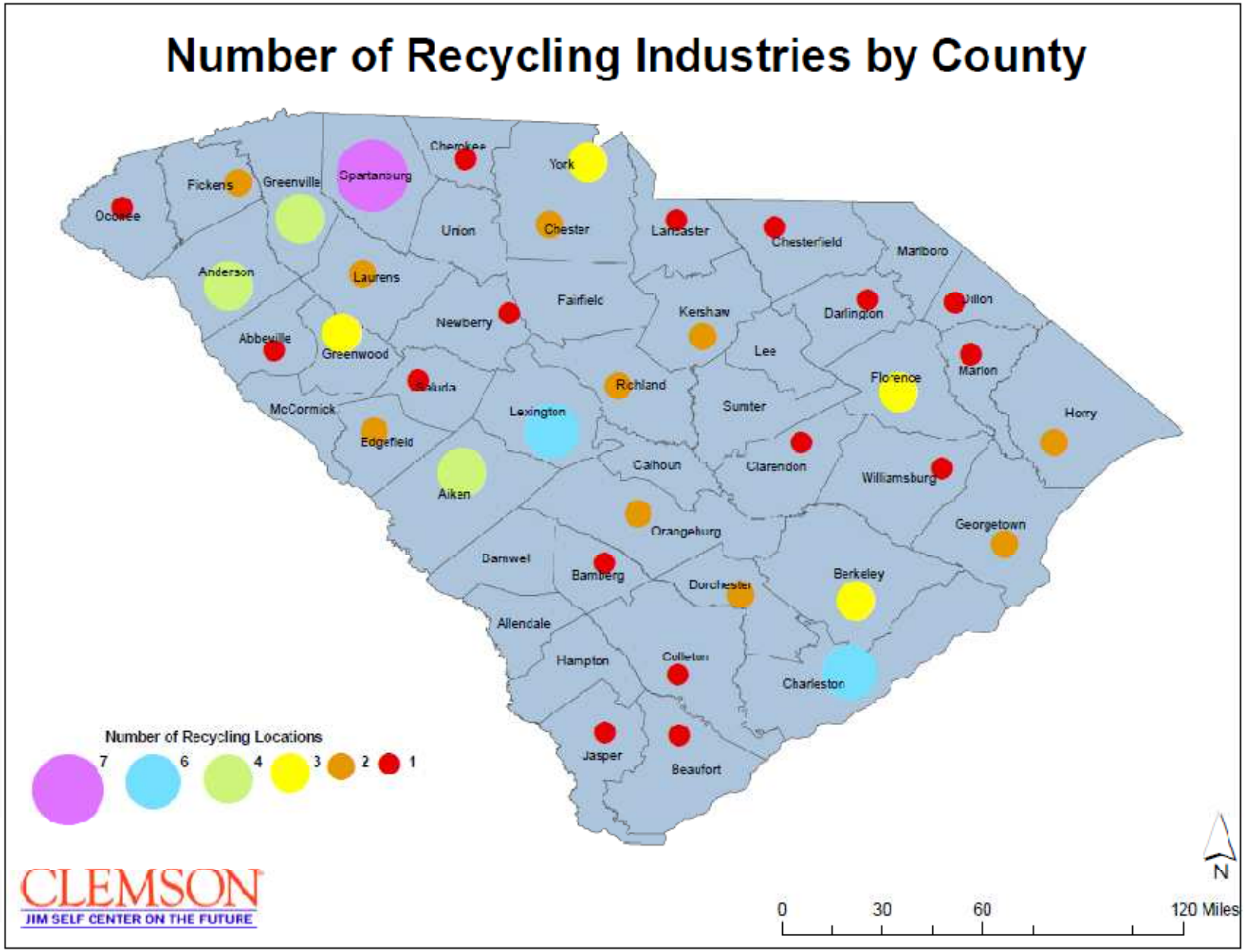

SC Miscellaneous Recyclers
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
25
50
100 Miles


SC Organics Recyclers
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
25
50
100 Miles

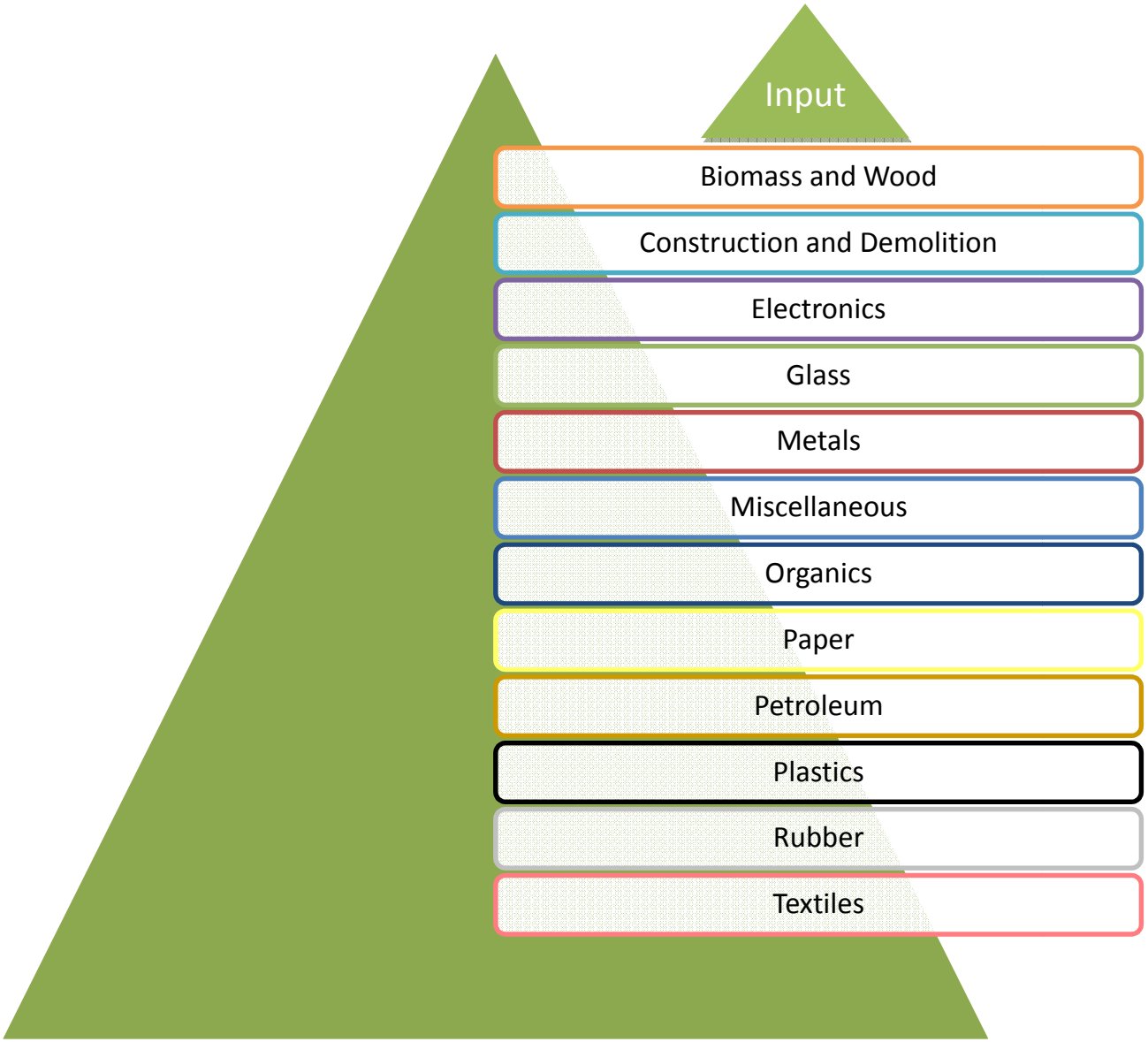

SC Petroleum Recyclers
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
25
50
100 Miles


SC Rubber Recyclers
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
25
50
100 Miles


SC Textiles Recyclers
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
25
50
100 Miles


Number of Recycling Industries by County
Cherokee
York
Fickens
Greenville
Spartanburg
Oconee
Union
Chester
Lancaster
Chesterfield
Marlboro
Anderson
Laurens
Fairfield
Kershaw
Darlington
Dillon
Newberry
Abbeville
Greenwood
Lee
Marion
Florence
Richland
McCormick
Sumter
Horry
Lexington
Edgefield
Calhoun
Clarendon
Williamsburg
Aiken
Orangeburg
Georgetown
Barnwell
Bamberg
Berkeley
Allendale
Hampton
Charleston
Jasper
Beaufort
Number of Recycling Locations
7
6
4
3
2
1
CLEMSON
JIM SELF CENTER ON THE FUTURE
N
0
30
60
120 Miles

Appendix K. Recycling Industry in South Carolina as provided by the Department of Commerce



Biomass and Wood

Biomass is defined as any plant matter used directly as fuel or converted into other forms before combustion. Included are wood, vegetal waste (including wood waste and crops used for energy production), animal materials/wastes, sulphite lyes, also known as “black liquor” (an alkaline spent liquor from the digesters in the production of sulphate or soda pulp during the manufacture of paper where the energy content derives from the lignin removed from the wood pulp) and other solid biomass (Organization for Economic Co-operation and Development, 2002).

Company	***City***	***Contact***
A. King Forest Products, LLC	Liberty	(864) 843-9175
A.C.E. Environmental, Inc.	Pelzer	(864) 947-8100
American Document Shredding	Columbia	(803) 765-1199
Ansaldo STS USA, Inc.	Batesburg	http://www.ansaldo-sts.com/
Barnwell Resources	Beaufort	(843) 525-6137
Barr Construction Inc.	Mount Pleasant	http://www.thebarrcompanies.com/
Baynes Pallet	Greenville	http://baynespallets.com/
Bearden Pallet Services Inc	Pickens	(864) 878-0086
Carolina Custom Pallets	Woodruff	(864) 433-0445
Cherokee Pallets	Gaffney	(864) 489-8452
Clean Harbors Environmental Services Inc.	Columbia	http://www.cleanharbors.com/
Cross Roads Paper	Greenville	http://www.crossroadspaper.com/
Custom Forest Products Inc	Spartanburg	http://www.customforest.biz/
Doug Hayes Grading	Gaffney	(864) 921-3261
East Coast Absorbents	Spartanburg	(864) 327.4400
EMES	Charleston	http://www.emes-usa.com/
G & G Mining Company, LLC	Conway	(843) 358-3381
G.L. Williams Landscaping Inc.	Graniteville	(803) 663-3715
Goodrich Engine Component Division	Hodges	(864)374-5050
Hansen Pallet Co	Pelion	(803) 894-3082
HBD Thermoid, Inc.	Elgin	http://www.hbdthermoid.com/
Hensons' Inc. Mulch & More	Simpsonville	http://www.hensonsinc.net/

Kaiser Enterprises Inc	Ridgeway	(803) 754-8912
Kimberly-Clark Corporation	Beech Island	(803) 827-1100
King Pallet Co	Liberty	(864) 843-2448
Lane Wood Products Inc	Marion	(843) 423-1844
LCR Construction, Inc.	Beaufort	http://www.lcrconstruction.net/
Low Country Pallets	Sumter	(803) 506-4040
Pallet Solutions, Inc.	Greer	(864) 895-2145
Palmetto Pallet Co Inc	Newberry	(803) 276-6541
Pee Dee Pallet, Inc.	Cheraw	(843) 537-2426
Refresh Services	Lexington	http://www.liverefresh.com/
Renew Resources LLC	Rock Hill	http://www.renewresourcesllc.com/
Rogers Grading	Rock Hill	(803) 327-5705
S & T Recycling LLC	Lexington	(803) 356-3867
S.H. Carter Development Inc	Greenville	http://www.shcarterinc.com/
Sea Island Habitat for Humanity Restore	John's Island	http://www.seaislandhabitat.org/
Three Rivers Solid Waste Authority	Jackson	http://www.trswa.org/
Trail or Trash Recycling	Greenville	http://www.trail-or-trash.com/

Construction and Demolition

Solid waste resulting from the construction or demolition of buildings and other structures, including, but not limited to, wood, plaster, metals, asphaltic substances, bricks, block and unsegregated concrete (Pennsylvania Department of Environmental Protection, 2010).

Company	***City***	***Contact***
A. King Forest Products, LLC	*Liberty*	*(864) 843-9175*
A.C.E. Environmental, Inc.	*Pelzer*	*(864) 947-8100*
Barnwell Resources	*Beaufort*	*(843) 525-6137*
Bowers Fibers, Inc.	Lancaster	http://www.bowersfibers.com/
Bush's Recycling Inc.	Florence	(843) 662-4117
Carolina Materials Corporation	Lexington	(803) 808-3344
Carolina Wrecking Inc.	Columbia	http://www.carolinawrecking.com/
Chester County	Chester	http://www.chestercounty.org
Clean Harbors Environmental Services Inc.	*Columbia*	http://www.cleanharbors.com/
CMC Recycling Spartanburg	Spartanburg	http://www.cmc.com
Concrete Recycling	Spartanburg	http://concreterecyclingsc.com/
Cox and Floyd Grading Inc	Greer	http://www.coxandfloyd.com/slice1.aspx
Custom Forest Products Inc	Spartanburg	http://www.customforest.biz
EMES	*Charleston*	http://www.emes-usa.com/
Fibex Incorporated	Aiken	http://www.fibexincorporated.com/
G & G Mining Company, LLC	*Conway*	*(843) 358-3381*
G.L. Williams Landscaping Inc.	*Graniteville*	*(803) 663-3715*
Global Recovery	St. George	http://www.geai.com./
IFCO Systems	Gray Court	http://www.ifco.com/global/com/en/index.php
Integrated Recycling Company of SC	Cowpens	(864) 463-3663
Kimberly-Clark Corporation	Beech Island	*(803) 827-1100*
LCR Construction, Inc.	*Beaufort*	*http://www.lcrconstruction.net/*
Leigh Fibers, Inc.	Wellford	http://www.leighfibers.com/
Mumford Industries Inc	Ninety Six	http://www.mumfordindustries.com/
Nucor Steel	Darlington	http://www.nucor.com/
Opta Minerals, Inc	Hardeeville	http://www.optaminerals.com/

Pee Dee Pallet, Inc.	*Cheraw*	*(843) 537-2426*
Rogers Grading	*Rock Hill*	*(803) 327-5705*
S & T Recycling LLC	*Lexington*	*(803) 356-3867*
S.H. Carter Development Inc	*Greenville*	*http://www.shcarterinc.com/*
Sanders Bros Construction Co, Inc	North Charleston	http://www.sandersbrothers.com/index.html
Sea Island Habitat for Humanity Restore	*John's Island*	*http://www.seaislandhabitat.org/*
Sonoco Recycling	Columbia	http://www.sonoco.com/sonoco/Services/Recycling/svc_sonoco_recycling.htm
Southeastern Plastics Recovery Inc.	Mt. Pleasant	http://southeasternplasticsrecovery.com/
Sumter Transportation	Sumter	http://www.sumtertransport.com/
Sustainable Warehouse	Mt. Pleasant	http://www.sustainablewarehouse.org/
Wellman Plastics Recycling LLC	Johnsonville	http://wellmanplastics.com/

Electronics

The term "e-waste" is applied to consumer and business electronic equipment that is near or at the end of its useful life. Certain components of some electronic products contain materials that render them hazardous, depending on their condition and density (California Department of Resources Recycling and Recovery (CalRecycle), 2010).

Company	***City***	***Contact***
A Recycling Center	Columbia	803-786-6690
American Document Shredding	*Columbia*	*(803) 765-1199*
Ansaldo STS USA, Inc.	*Batesburg*	*http://www.ansaldo-sts.com/*
Charleston County Recycling	Charleston	http://www.charlestoncounty.org/
Chester County	Chester	http://www.chestercountyswa.org/
Clean Harbors Environmental Services Inc.	*Columbia*	*http://www.cleanharbors.com/*
Cleanlites Recycling, Inc	Spartanburg	http://www.usalamp.com/
CompuWorks Inc	Gaston	http://www.compuworksinc.biz/
Crandall Corp	Lexington	http://www.crandallusa.com/
Earth Protection Services Inc.	Williamston	(864) 847-7700
Ever Green Recycling Co	Greenville	http://www.ever-greenrecycling.com/
Fisher Recycling Inc	North Charleston	http://www.fisherrecycling.com/
Global Investment Recovery Inc	Salley	*http://www.girpm.com/*
Goodrich Engine Component Division	*Hodges*	*(864)374-5050*
HBD Thermoid, Inc.	*Elgin*	*http://www.hbdthermoid.com/*
Ink World USA	Cowpens	http://www.inkworldusa.com/
Inksters of America	Greenwood	http://www.inkstersink.com/index.php
Inksters of America	Anderson	http://www.inkstersink.com/index.php
Inksters of America	Clemson	http://www.inkstersink.com/index.php
Metro Zeal Recycling Systems, Inc	Moore	http://www.metrozeal.com/
OWT Inc	Anderson	http://www.ttigroupna.com/
Renew Resources LLC	*Rock Hill*	*http://www.renewresourcesllc.com/*
Roff Recycling LLC d/b/a Fisher Recycling	Pawleys Island	http://www.fisherrecycling.com/
S.H. Carter Development Inc	*Greenville*	*http://www.shcarterinc.com/*
Sea Island Habitat for Humanity Restore	*John's Island*	*http://www.seaislandhabitat.org/*

Stewart Recycling Co Inc	Sumter	http://stewartrecycling.com/
Tomato Palms, LLC	Irmo	http://www.tomatopalms.com/
TonerCharge Co	North Augusta	http://www.tonercharge.com/

Glass

Glass recycling refers primarily to glass containers – that is bottles and jars. The national recycling rate of glass is 28 percent (about 2.8 million tons of glass were recycled) in 2008 according to EPA. For glass beer and soft drink bottles, the U.S. recycling rate was 35.6 percent while about 15 percent of the wine and liquor bottles were recycled. Glass containers present long-standing obstacles for local government recycling programs. The sheer weight of glass containers makes them difficult and costly to get to market. Contamination also is a crucial issue. Different types of glass (e.g., window glass, ceramics) placed in with bottles and jars can contaminate the collected material. In addition, glass comes in different colors (e.g., clear, green, brown) and has a higher market value if collected separately (DHEC, 2009).

Company	***City***	***Contact***
American Recycling of SC	Greenville	http://www.amrecycling.com/
Ansaldo STS USA, Inc.	Batesburg	*http://www.ansaldo-sts.com/*
Charleston County Recycling	*Charleston*	*http://www.charlestoncounty.org/*
Clean Harbors Environmental Services Inc.	*Columbia*	*http://www.cleanharbors.com/*
Ever Green Recycling Co	*Greenville*	*http://www.ever-greenrecycling.com/*
Fisher Recycling Inc	*North Charleston*	*http://www.fisherrecycling.com/*
Goodrich Engine Component Division	*Hodges*	*(864)374-5050*
Guardian Industries Inc.	Richburg	http://www.guardian.com/en/index1.html
Roff Recycling LLC d/b/a Fisher Recycling	Pawleys Island	*http://www.fisherrecycling.com/*
S.H. Carter Development Inc	Greenville	*http://www.shcarterinc.com/*
Sonoco Recycling	Columbia	*http://www.sonoco.com/sonoco/Services/Recycling/svc_sonoco_recycling.htm*
Stewart Recycling Co Inc	Sumter	*http://www.tomatopalms.com/*
Sumter Transportation	Sumter	*http://www.sumtertransport.com/*
Tomato Palms, LLC	Irmo	*http://www.tomatopalms.com/*

Metals

Generally, there are two types of metal. The first is ferrous metal that is magnetic and derived from iron or steel. Products made from ferrous metal include appliances, furniture, containers and packaging like steel drums and barrels. The second type is non-ferrous metal that is non-magnetic and includes aluminum, lead and copper. Products made from non-ferrous metal include containers, packaging, furniture, appliances, electronics and aluminum foil (DHEC, 2009).

Company	***City***	***Contact***
A Recycling Center	*Columbia*	*http://www.arecyclingcenter.com*
A&P Recycling Co	Sumter	http://www.aandprecycling.com/hc3.asp
A.C.E. Environmental, Inc.	Pelzer	(864) 947-8100
All Metals Recycling	Spartanburg	http://www.allmetalsrecycling.com
American Metals	Charleston	http://www.americanmetalscompany.com/
American Recycling of SC	*Greenville*	*http://www.amrecycling.com/*
Ansaldo STS USA, Inc.	Batesburg	*http://www.ansaldo-sts.us*
Belton Metal Co, Inc.	Belton	(864)338-7426
Berkeley Scrap Metal	Moncks Corner	(843) 761-8471
Bush's Recycling Inc.	Florence	(843) 662-4117
Camden Steel & Metal Co	Camden	(803) 432-6595
Carroll Heavy Metal Recycling	Olar	(803)259-0171
Charleston County Recycling	Charleston	http://www.charlestoncounty.org
Charleston Steel & Metal Co	Mount Holly	http://www.charlestonsteelandmetal.com/
Cheraw Iron & Metal Co	Cheraw	(843) 537-5742
Chester County	Chester	http://www.chestercounty.org
Clean Harbors Environmental Services Inc.	Columbia	http://www.Cleanharbors.com
Cleanlites Recycling, Inc	Spartanburg	http://www.cleanlites.com
CMC Metal Recycling	Florence	http://www.cmc.com
CMC Recycling Spartanburg	Spartanburg	http://www.cmc.com
CMC Steel SC	Cayce	http://www.cmc.com
CMCR Cayce	Cayce	http://www.cmc.com
CMCR Gaston	Gaston	http://www.cmc.com
CMCR Lexington	Lexington	http://www.cmc.com

Commercial Metals Company	Lexington	http://www.cmc.com
Container Recycling	Gaffney	(864) 489-6007
Crandall Corp	Lexington	http://www.crandallusa.com
CRC Scrap llc	Duncan	http://crcmetalrecycling.com
Dependable Drum Company, Inc.	Taylors	http://www.dependabledrum.com
Don's Car Crushing Inc	Hemingway	(843) 558-2212
Doug Hayes Grading	*Gaffney*	*http://www.doughayesgrading.com/*
Earth Protection Services Inc.	Williamston	http://www.earthpro.com
Edward Hunnicutt's Recycling	Seneca	(864) 882.5989
EMES	*Charleston*	*http://www.emes-usa.com*
Ever Green Recycling Co	Greenville	http://www.ever-greenrecycling.com
Fisher Recycling Inc	North Charleston	http://www.fisherrecycling.com
Global Investment Recovery Inc	Salley	http://www.girpm.com
Global Recovery	*St. George*	http://www.geai.com
Goodrich Engine Component Division	*Hodges*	*(864)374-5050*
Hiott Recycling	Walterboro	(843) 893-3184
Johnson's Garbage Service, Inc.	Columbia	(803) 754-5537
Jordan Scrap Metal Co Inc	Marion	(843) 423-1932
JW Aluminum	Goose Creek	http://www.jwaluminum.com
Kimberly-Clark Corporation	*Beech Island*	*(803) 827-1100*
Lockamy Scrap Metal, Inc.	Dillon	(843) 774-4171
Metro Zeal Recycling Systems, Inc	Moore	http://www.metrozeal.com
Mid-Carolina Steel & Recycling Co., Inc	Columbia	http://www.mid-carolinasteel.com
Mintz Scrap Iron & Metal Co., Inc.	Spartanburg	(864) 585-4128
Newell Recycling LLC		http://www.newellrecycling.com
Norris Iron & Metal Inc.	Greenville	(864) 232-4490
Nucor Corp-Vulcraft Div	Florence	http://www.nucor.com/
Nucor Steel	*Darlington*	*http://www.nucor.com/*
Nucor Steel	*Huger*	*http://www.nucor.com/*
Omnisource Southeast, Anderson	Anderson	http://www.omnisource.com/
Omnisource Southeast, Greenville	Berea	http://www.omnisource.com/
Omnisource Southeast, Greenwood	Greenwood	http://www.omnisource.com/

Omnisource Southeast, Laurens	Clinton	http://www.omnisource.com/
Omnisource Southeast, Richland	Columbia	http://www.omnisource.com/
Omnisource Southeast, Spartanburg	Spartanburg	http://www.omnisource.com/
Opta Minerals, Inc	*Hardeeville*	*http://www.optaminerals.com*
Orangeburg Recycling Co, LLC	Orangeburg	(803) 536-4108
OWT Inc	*Anderson*	*http://www.TTIGroudpna.com*
Phibro-Tech Inc	Sumter	www.phibrotech.com
Recover, Inc	Greer	http://www.recoverusa.com
Renew Resources LLC	*Rock Hill*	*http://www.renewresourcesllc.com*
S & T Recycling LLC	*Lexington*	*(803) 356-3867*
S.H. Carter Development Inc	*Greenville*	*http://www.shcarterinc.com*
Saf-Way Recycler	Conway	http://www.saf-wayrecycler.com
Sanders Bros Construction Co, Inc	North Charleston	http://www.sandersbrothers.com
Sea Island Habitat for Humanity Restore	John's Island	http://www.seaislandhabitat.org
Smith Metal & Iron Co	Rock Hill	(803) 324-5353
Sonoco Recycling	Columbia	*http://www.sonoco.com/sonoco/Services/Recycling/svc_sonoco_recycling.htm*
Stewart Recycling Co Inc	*Sumter*	*http://stewartrecycling.com/*
Sumter Transportation	*Sumter*	*http://www.sumtertransport.com*
Sunshine Recycling	Orangeburg	http://www.sunshinerecycle.com/
Synehi Castings, Inc.	Greenwood	http://www.synehicastings.com/
T.H. Snipes & Sons	York	(803) 366-1840
Tomato Palms, LLC	*Irmo*	*http://tomatopalms.com*
USA Waste and Recycling	Darlington	http://usawasteandrecycling.com/
Waccamaw Metal Recycling Inc	Myrtle Beach	http://www.waccamawmetalrecycling.com/

Miscellaneous

United Resource Recovery Corporation	*Spartanburg*	*http://www.urrc.net/new/pages/*

Organics

Organics recycling refers to processing of organic materials that are then returned to use in the form of products such as mulch or compost. "Organic materials" include, but are not limited to, yard trimmings, food residuals, manures, agricultural crop residues, biosolids, and lumber. (New Mexico Recycling Coalition)

Company	City	Contact
Ansaldo STS USA, Inc.	*Batesburg*	*http://www.ansaldo-sts.us*
Clean Harbors Environmental Services Inc.	*Columbia*	*http://www.Cleanharbors.com*
Crandall Corp	*Lexington*	*http://www.crandallusa.com*
Fisher Recycling Inc	*North Charleston*	*http://www.fisherrecycling.com*
Giant Resources Recovery, Div of Giant Cement	Harleyville	http://www.grr-giant.com/
Kimberly-Clark Corporation	*Beech Island*	*(803) 827-1100*
Pee Dee Pallet, Inc.	*Cheraw*	*(843) 537-2426*
Refresh Services	*Lexington*	*http://www.liverefresh.com/*
Roff Recycling LLC d/b/a Fisher Recycling	*Pawleys Island*	*http://www.fisherrecycling.com*
Valley Proteins Inc	Ward	http://www.valleyproteins.com/

Paper

Paper refers to products and materials – including newspaper, magazines, office paper, corrugated containers, bags and some paperboard packaging – that can be recycled into new paper products (DHEC, 2009).

Company	***City***	***Contact***
A Recycling Center	*Columbia*	*http://www.arecyclingcenter.com*
A.C.E. Environmental, Inc.	*Pelzer*	*(864) 947-8100*
Advanced Document Shredding, Llc	*Beaufort*	*http://www.ad-shredding.com/*
American Document Shredding	*Columbia*	*http://www.ad-shredding.com/*
American Recycling of SC	*Greenville*	*http://www.amrecycling.com/*
Ansaldo STS USA, Inc.	*Batesburg*	*http://www.ansaldo-sts.us*
Blue Ridge Packaging Inc	Simpsonville	http://www.blueridgepackaging.com/
Carolina Records & Information Management	Cayce	http://www.carolinarecords.net/
Carotell Paperboard	Taylors	(864) 244-6221
Charleston County Recycling	*Charleston*	*http://www.charlestoncounty.org/*
Chester County	*Chester*	*http://www.chestercountyswa.org/*
Clean Harbors Environmental Services Inc.	*Columbia*	*http://www.Cleanharbors.com*
Container Recycling	Gaffney	http://www.recyclingcontainer.com/
Crandall Corp	*Lexington*	*http://www.crandallusa.com/*
Cross Roads Paper	*Greenville*	*http://www.crossroadspaper.com/*
D&G Enterprises, Inc.	Florence	(843) 665-2517
Dependable Drum Company, Inc.	Taylors	http://dependabledrum.com/
Ever Green Recycling Co	*Greenville*	*http://www.ever-greenrecycling.com/*
Fisher Recycling Inc	*North Charleston*	*http://www.fisherrecycling.com*
Global Paper Shredding Inc.	West Columbia	(803) 936-1770
Goodrich Engine Component Division	*Hodges*	*(864)374-5050*
Intergrated Recycling Company of SC	*Cowpens*	*(864) 463-3663*
Iron Mountain	West Columbia	http://www.ironmountain.com/
Johnson's Garbage Service, Inc.	*Columbia*	*(803) 754-5537*
Kimberly-Clark Corporation	*Beech Island*	*(803) 827-1100*
Mid-Carolina Steel & Recycling Co., Inc	*Columbia*	*http://www.mid-carolinasteel.com*

Mumford Industries Inc	*Ninety Six*	*http://www.mumfordindustries.com/*
OWT Inc	*Anderson*	*http://www.ttigroupna.com/*
Pallet Solutions, Inc.	*Greer*	*(864) 895-2145*
Pharr Yarns Inc-Clover Div	*Clover*	*http://www.pharryarns.com/*
Pratt Recycling	*West Columbia*	*http://www.prattindustries.com/*
Recover, Inc	*Greer*	*http://www.recoverusa.com*
Refresh Services	*Lexington*	*http://www.liverefresh.com/*
Renew Resources LLC	*Rock Hill*	*http://www.renewresourcesllc.com/*
Roff Recycling LLC d/b/a Fisher Recycling	*Pawleys Island*	*http://www.fisherrecycling.com/*
S.H. Carter Development Inc	*Greenville*	*http://www.shcarterinc.com*
Sea Island Habitat for Humanity Restore	*John's Island*	*http://www.seaislandhabitat.org/*
Shred With Us, LLC	Lexington	http://www.shredwithus.com/
Shred-It	Summerville	http://www.shredit.com/
Sonoco Recycling	*Columbia*	*http://www.sonoco.com/sonoco/Services/Recycling/svc_sonoco_recycling.htm*
SP Recycling Co	WellFord	http://www.sprecycling.com/
Stewart Recycling Co Inc	*Sumter*	*http://stewartrecycling.com/*
Sumter Transportation	*Sumter*	*http://www.sumtertransport.com/*
Tomato Palms, LLC	*Irmo*	*http://tomatopalms.com*
Tracpak International, Inc.	Greer	http://www.tracpak.com/
Trail or Trash Recycling	*Greenville*	*http://www.trail-or-trash.com/*
U.S. Corrugated, Inc.	Cowpens	http://www.uscorr.com/

Petroleum

Company	***City***	***Contact***
A.C.E. Environmental, Inc.	*Pelzer*	*(864) 947-8100*
Advanced Environmental Options, Inc.	Spartanburg	http://www.aeoweb.com/
Ansaldo STS USA, Inc.	*Batesburg*	*http://www.ansaldo-sts.us*
Chester County	*Chester*	*http://www.chestercountyswa.org/*
Clean Harbors Environmental Services Inc.	*Columbia*	*http://www.Cleanharbors.com*
Crandall Corp	*Lexington*	*http://www.crandallusa.com/*
EMES	*Charleston*	*http://www.emes-usa.com*
Giant Resources Recovery, Div of Giant Cement	*Harleyville*	*http://www.grr-giant.com/*
Global Recovery	*St. George*	*http://www.geai.com./*
Goodrich Engine Component Division	*Hodges*	*(864)374-5050*
Kimberly-Clark Corporation	*Beech Island*	*(803) 827-1100*
Nu-Way Environmentalist, Inc. DBA Saf-Way Recycler	Conway	(843) 365-1842
Petroleum Recovery Services LLC	North Charleston	(843) 225-1777
Renew Resources LLC	Rock Hill	*http://www.renewresourcesllc.com/*
Resource Recycling Inc.	Columbia	(803) 788-6196
Saf-Way Recycler	Conway	(843) 365-1842
Sumter Transportation	Sumter	*http://www.sumtertransport.com/*
T K Tank Service Inc	Sumter	
Universal Environmental Services, LLC	St. George	http://www.universalenvironmentalservices.com

Plastics

Plastics are a rapidly growing segment of the MSW stream. Most plastics are used in containers and packaging (e.g., soft drink bottles, shampoo bottles), but they also are found in durable (e.g., appliances, furniture) and nondurable (e.g., diapers, trash bags, medical devices, cups and utensils) goods (DHEC, 2009).

Company	***City***	***Contact***
2k Southern Inc	Cowpens	(864) 463-8600
A Recycling Center	*Columbia*	*http://www.arecyclingcenter.com*
American Recycling of SC	*Greenville*	*http://www.amrecycling.com/*
American Recycling Solutions	Columbia	
Ansaldo STS USA, Inc.	*Batesburg*	*http://www.ansaldo-sts.us*
Blue Ridge Packaging Inc	*Simpsonville*	*http://www.blueridgepackaging.com/*
Carolina Plastics	Seneca	http://carolinaplastics.com/
Catawba Plastics	Chester	(803) 581-5855
Charleston County Recycling	*Charleston*	*http://www.crossroadspaper.com/*
Clean Harbors Environmental Services Inc.	*Columbia*	*http://www.Cleanharbors.com*
Container Recycling	*Gaffney*	*http://www.recyclingcontainer.com/*
Crandall Corp	*Lexington*	*http://www.crandallusa.com/*
Cross Roads Paper	*Greenville*	*http://www.crossroadspaper.com/*
Dependable Drum Company, Inc.	*Taylors*	*http://dependabledrum.com/*
EMES	*Charleston*	*http://www.emes-usa.com*
Ever Green Recycling Co	*Greenville*	*http://www.ever-greenrecycling.com/*
Fibex Incorporated	*Aiken*	*http://www.fibexincorporated.com/*
Fisher Recycling Inc	*North Charleston*	*http://www.fisherrecycling.com*
Global Paper Shredding Inc.	*West Columbia*	*(803) 936-1770*
Global Recovery	*St. George*	*http://www.geai.com./*
Industrial Recovery & Recycling Inc	Greer	http://www.irr-tmc.com/
Intergrated Recycling Company of SC	*Cowpens*	*(864) 463-3663*
ITW Angleboard	Darlington	http://www.itwangleboard.com/
Johnson's Garbage Service, Inc.	*Columbia*	*(803) 754-5537*
Kimberly-Clark Corporation	*Beech Island*	*(803) 827-1100*
King Pallet Co	Liberty	(864) 843-2448

Mumford Industries Inc	*Ninety Six*	*http://www.mumfordindustries.com/*
Pallet Solutions, Inc.	*Greer*	*(864) 895-2145*
Plastics Provider Inc.	Conway	(843) 347-2997
Recover, Inc	*Greer*	*http://www.recoverusa.com*
Residue Recycling Inc	Pendleton	http://www.residuerecycling.com
Roff Recycling LLC d/b/a Fisher Recycling	*Pawleys Island*	*http://www.fisherrecycling.com*
Rogers Grading	*Rock Hill*	*(803) 327-5705*
Rondy & Co Inc	Abbeville	http://www.rondy.net/
Sea Island Habitat for Humanity Restore	*John's Island*	*http://www.seaislandhabitat.org/*
Sonoco Recycling	Columbia	*http://www.sonoco.com/sonoco/Services/Recycling/svc_sonoco_recycling.htm*
Southeastern Plastics Recovery Inc.	Mt. Pleasant	(843) 308-5800
Stewart Recycling Co Inc	Sumter	http://stewartrecycling.com/
Sumter Transportation	*Sumter*	*http://www.sumtertransport.com/*
Trail or Trash Recycling	*Greenville*	*http://www.trail-or-trash.com/*
United Resource Recovery Corporation	*Spartanburg*	*http://www.urrc.net/new/pages/*
WasteZero	Murrells Inlet	http://wastezero.com/
Wellman Plastics Recycling LLC	*Johnsonville*	*(843) 386-2011*

Rubber

Company	*City*	*Contact*
Clean Harbors Environmental Services Inc.	*Columbia*	*http://www.Cleanharbors.com*
Crandall Corp	*Lexington*	*http://www.crandallusa.com/*
Easy Gardner	Batesburg-Leesville	(803) 532-4425
Global Recovery	*St. George*	*http://www.geai.com./*
King Pallet Co	*Liberty*	*(864) 843-2448*
Mumford Industries Inc	*Ninety Six*	*http://www.mumfordindustries.com/*
Ridge Recyclers	Johnston	http://www.ridgerecycling.com/
Rondy & Co Inc	*Abbeville*	http://www.rondy.net/
Rubber Recovery Inc	Moncks Corner	(843) 761-7955
Sumter Transportation	*Sumter*	*http://www.sumtertransport.com/*
Three Rivers Solid Waste Authority	Jackson	http://www.trswa.org/

Textiles

Company	*City*	*Contact*
A. Sheftel and Sons Inc	Spartanburg	http://www.sheftel.com/allied.htm
Bowers Fibers, Inc.	*Lancaster*	*http://www.bowersfibers.com/*
Carolina Textiles Inc	Walterboro	(843) 538-8644
Clean Harbors Environmental Services Inc.	*Columbia*	*http://www.Cleanharbors.com*
Crandall Corp	*Lexington*	*http://www.crandallusa.com/*
Fibex Incorporated	*Aiken*	*http://www.crandallusa.com/*
Florence Textiles Inc	Florence	(843) 665-5572
Global Recovery	*St. George*	*http://www.geai.com./*
Greenwood Mills Inc	Greenwood	http://www.greenwoodmills.com/
HBD Thermoid, Inc.	*Elgin*	*http://www.hbdthermoid.com/*
Intergrated Recycling Company of SC	*Cowpens*	*(864) 463-3663*
Leigh Fibers, Inc.	*Wellford*	*http://www.leighfibers.com/*
Mumford Industries Inc	*Ninety Six*	*http://www.mumfordindustries.com/*
Pharr Yarns Inc-Clover Div	*Clover*	*http://www.pharryarns.com/*
Renew Resources LLC	*Rock Hill*	*http://www.renewresourcesllc.com/*
Sonoco Recycling	*Columbia*	*http://www.sonoco.com/sonoco/Services/Recycling/svc_sonoco_recycling.htm*
Southeastern Plastics Recovery Inc.	*Mt. Pleasant*	*(843) 308-5800*
Southern Felt Company, Inc.	North Augusta	http://www.southernfelt.com/
Sumter Transportation	*Sumter*	*http://www.sumtertransport.com/*
Trail or Trash Recycling	*Greenville*	*http://www.trail-or-trash.com/*
Wellman Plastics Recycling LLC	*Johnsonville*	*(843) 386-2011*

Appendix L. References

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