2014 SWANA EXCELLENCE AWARD NOMINATION

INTEGRATED SOLID WASTE MANAGEMENT SYSTEMS

GASTON COUNTY, NORTH CAROLINA
Solid Waste and Recycling Division
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# 2014 Excellence Award Entry, Integrated Solid Waste Management Systems,
Gaston County Solid Waste and Recycling

## Table of Contents

**Executive Summary**

1. **Overview and System Performance**
   - Introduction
   - Facilities and Programs
   - Operational Effectiveness and Efficiency
   - Long-term Viability
   - Environmental Protection and Regulatory Compliance

2. **Financial and Business Management**
   - Operational Goals
   - Financial Goals and Costs
   - Planning and Forecasting
   - Employee Relations
   - Change Management Processes

3. **Community Relations**
   - Community Outreach
   - Public Education
   - Community Relations
   - Customer Service

**Appendices**

- 2014 EPA LMOP Community Partner of the Year Award
- 2013 Carolina Recycling Association Local Government and Recycler of the Year Awards
- 2011 North Carolina Mobile Care Award
Executive Summary

Gaston County, North Carolina owns and operates a municipal solid waste landfill, construction and demolition landfill, six recycling/convenience sites, yard waste facility, household hazardous waste facility, power generation facility, and a newly constructed Eco-Industrial Park. The mission of Gaston County Solid Waste and Recycling Division is to protect the residents and natural resources of Gaston County by providing an environmentally friendly and educational atmosphere. Gaston County achieves this mission through extensive recycling programs, reuse opportunities and commodity management of landfill gas. Minimization of the environmental impacts resulting from solid waste management operations is typically achieved through an integrated approach of waste reduction, recycling and disposal. Using this backdrop, the County developed a strategy to conserve existing resources by reducing the quantity of material disposed and by developing renewable resources from the municipal solid waste managed at the Gaston County Landfill and the resultant products of waste decomposition and recycling.

Flow Chart of Gaston County Solid Waste and Recycling operations
1. Overview and System Performance

INTRODUCTION

Gaston County is located in the South-Central Piedmont of North Carolina and is the third-largest county in the Charlotte Region. By operating through an enterprise fund, Gaston County Solid Waste and Recycling exhibits some autonomy to allow growth and exploration into future sustainable efforts through our landfill, recycling centers, yard waste facility, renewable energy center, and our new energy park. With all of these facilities and resources, we will continue to grow new programs throughout the county in efforts to promote sustainable practices as we serve our 200,000 county residents, including the municipalities of Gastonia, Dellview, Cherryville, High Shoals, Stanley, Bessemer City, Kings Mountain, Spencer Mountain, Mount Holly, Ranlo, Lowell, McAdenville, Belmont, and Cramerton.

The County owns and operates a 400-acre + integrated solid waste management facility located just north of Dallas, NC where the County conducts MSW disposal, construction and demolition debris disposal, yard waste, and recycling operations. The facility was opened in 1987 and, on average, disposes of approximately 130,000 tons/year of MSW and 50,000 tons/year of C&D. In addition to soundly running their ISWM facility, Gaston County Solid Waste and Recycling Division also excels in the areas of source reduction, community education, business/commercial education, school education and special waste management.
FACILITIES & PROGRAMS

Landfill

Gaston County’s landfill facility has approximately 2,650,000 tons of municipal solid waste disposed in Area C and Area D, Unit 1, and Unit 2, Phase 1 MSW landfill units. Daily landfill operations include compaction and cover of trash, environmental control upkeep, and recycling.

Gaston County investigated the potential benefits of using alternate cover material for its landfill which resulted in a preference for Posi-Shell Advanced Formulation. As an extension of the air space savings afforded through the utilization of Posi-Shell, the County also considered a latex paint additive that could further demonstrate reuse in the waste collected at the Household Hazardous Waste events. Waste latex paint has been demonstrated to enhance the Posi-Shell mixture by increasing its viscosity, density, and opacity, which lead to more effective and durable cover material. Waste latex paint replaces Portland cement in the mixture and is added in accordance with manufacturer’s recommendations. The County’s HHW operators are properly trained to recognize latex paints from oil-based pains and, currently separate such paints for proper disposal.

The landfill is also recycling other recoverable materials associated with construction and demolition debris. Block, brick and concrete is being crushed and used on site for roadbed material. Cardboard is baled and shipped with other fiber products collected through our convenience sites. A metal bin is easily accessible for our customers to place metal into a recycling container. The County is presently talking with local poultry agents to determine the feasibility of used crushed/ground drywall for the poultry industry.

ALTERNATE FUEL

Gaston County Solid Waste and Recycling has proven to be on the forefront with alternative fuel technology over the past several years. Our landfill was the first in the state to convert all 14 pieces of heavy duty off-road equipment to B-20 biodiesel in the fall of 2006. We have expanded our storage capabilities with the help of several grants and are dedicated to using approximately 100,000 gallons of biodiesel per year. The general use of biodiesel was only our first step.

Gaston County Landfill has also provided engine repowers and replacements in some of our aging equipment. This, along with our anti-idling policy, has had a significant impact on our air quality by displacing at least 20,000 gallons of traditional diesel annually. Gaston County has been and continues to be a leader in green energy/infrastructure ideas and implementation not only in our region, but our state.
Yard Waste Facility

The County owns and operates a yard waste facility located across the street from the landfill. Along with yard waste debris, clean wood can be separated and added to the yard waste program. Gaston County currently conducts mulching of yard waste, which is provided to county residents at minimal cost. The County yard waste programs have been very successful in providing a useable product from the waste disposed and will be continued as a component of the long-term solid waste management plan.

Household Hazardous Waste and Special Waste

In 1994, the Gaston County Board of Commissioners recognized the need to provide the citizens of Gaston County with the first Household Hazardous Waste Collection Day. The first two events were held at the County Park in Dallas. In 1996, the collection event was held at three locations simultaneously. The HHW programs have continued to be successful as reflected in the quantities of waste collected through the years. However, the program’s one major shortfall was that the annual collection event left a lengthy time gap for residents who wanted to dispose of hazardous waste at other times of the year. With these legitimate public concerns, staff looked at long-term, permanent collection sites for HHW. The County established a permanent HHW collection facility in Dallas. The facility has operated four Saturdays per year for collection of HHW from County residents. This has created a safe, economical, and convenient location to collect HHW more frequently. Overall, the County’s HHW program continues to be well received by the public as being a needed outlet for disposal of common household items which could be hazardous to our local environment if not properly handled.

At each HHW event, latex and oil based paints, aerosols, cleaning supplies, batteries, mercury, fluorescent lights, pesticides, antifreeze, used oil, and oil filters are among items collected from county residents.

The Solid Waste and Recycling Division has offered fluorescent lamp recycling for several years through our HHW Collection events, and have expanded that collection for County facilities in recent years. In accordance to Session Law 2010-180, House Bill 1766, Gaston County recycles fluorescent lamps, compact fluorescent bulbs, U-shape bulbs, circular fluorescents, HID, high pressure sodium and mercury vapor lamps. All County owned buildings bring their spent lamps to the landfill for proper packaging prior to shipping. Landfill staff collects and packs until there are enough to ship.
Convenience Sites

Gaston County operates six recycling drop-off centers located near the municipalities of Gastonia, Dallas, Belmont, Mt. Holly, and Bessemer City. Residential solid waste and recyclables are collected at five recycling/convenience sites; the sixth drop-off center accepts recycling only and is located in downtown Gastonia at a site adjacent to the Farmer's Market. These drop-off centers are available for use by all residents of Gaston County. Solid Waste that is brought to these centers is taken for a nominal fee depending on the amount and size of the materials. Credit is given for recyclable products, while tires off the rim and white goods are taken free of charge. The recyclable materials collected at these facilities include newspaper, mixed paper, toner cartridges, corrugated cardboard, cans (aluminum, steel and tin), assorted colors of glass, plastic bottles, motor oil and filters, antifreeze, used cooking oil, lead-acid batteries, white goods, scrap metal, electronics and tires. These centers are staffed to provide residents with information on recycling and materials preparation.

Gaston County began an electronics recycling program in 2006. Electronics are collected at each of the six recycling/convenience sites. Currently the County is educating the public through information on the website and through presentations given to church, civic and school groups. The County has also offered their site to the local municipalities as a housing facility for any electronics they may collect from their residents.

Although not considered hazardous, liquid cooking oil does pose a challenge with regard to disposal. Residents cannot pour it down the drain because it eventually clogs sewer drain lines, and liquid wastes are not allowed in the Gaston County Landfill. In light of these disposal challenges, Gaston County Solid Waste and Recycling has initiated a partnership with Gaston County Schools and City of Gastonia Wastewater Treatment to collect used cooking oil for use in the school system’s biodiesel production program. Cooking oil is collected at the recycling/convenience sites and is then transported to the County school garages, where it is processed into biodiesel fuel to be utilized in the school buses.

During the past year, Gaston County Solid Waste and Recycling has partnered with Carolina Value Village to begin a clothing and cloth recycling program. In addition to the clothing recycling, the County has also partnered with Gaston Foot and Ankle to provide a shoe recycling program for the past two years. Gently used shoes are collected at the sites and sent to a company, SoleMates. This company is a for profit company and their business model includes hiring local people to transport, clean and shine the shoes to make them as desirable as possible, and to sell shoes where affordable shoes are needed.
In 2008, Gaston County began to explore sustainability practices that could be implemented in conjunction with its existing solid waste management and landfill operations. The major challenge of the County’s sustainability initiative was to provide what is best for the citizens of Gaston County and the environment both now and in the indefinite future.

Given recent concerns regarding global warming, the County also wanted to insure that appropriate stewardship practices were in place or being developed for their existing landfill operation to reduce greenhouse gas emissions. The County established three primary sustainability objectives: (1) to reduce greenhouse gas emissions from the decomposition of waste occurring in the landfill; (2) to produce renewable energy from the capture of biogas; and (3) to provide the infrastructure for development of a green Eco-Industrial Park.

Although Gaston County is not currently required by regulation to collect and control the gases released from its landfill site, approximately 1,000 standard cubic feet per minute (SCFM) of landfill gas is being collected and either destroyed through a flaring system or sent to the Renewable Energy Center where 2 GE Jenbacher J 420 engines are running full time, producing power.

The Renewable Energy Center, which went online in the fall of 2011, initially included installation of gas clean-up and compression equipment, construction of a gas transmission line from the landfill to the generator site, and installation of three internal combustion engine-generator sets designed to burn low BTU landfill gas. The generation facility is designed to accommodate expansion through the addition of a fourth generator. The landfill gas collection system will be expanded as future MSW landfill cells are developed and more gas becomes available.

The Gaston County Renewable Energy Center also includes a roof-type solar panel array that has the potential to produce 28.5 kW. The addition of the solar panel array helps off-set the parasitic load of the building and was a unique feature that was attractive to Duke Power when setting up the Power Purchase Agreement.
LFGTE System and Eco-Industrial Park

Initially, the gas extraction and compression systems were each fitted with two 60 Hz Gardner Denver centrifugal blowers. The power generation facility includes three GE Jenbacher J 420 generators at 1.4 megawatts (MW) each. However, the system, building, and the grid interconnect is designed to accommodate approximately 6 megawatts as more gas becomes available. The infrastructure design includes up-fits of two additional blowers and an additional generator. The Renewable Energy Center initially produces enough power for 1,900 homes and will eventually expand to serve as many as 3,800 homes by 2021.

The Gaston County Eco-Industrial Park is designed to leverage the County’s substantial landfill gas and recyclable material reserves as inputs for a web of businesses creating value-added products. The concept includes use of waste from one facility as an input to another—giving all businesses located in the park a competitive advantage. The Park is designed to interconnect with the existing Renewable Energy Center (REC). Excess heat from the electricity generation process and excess landfill gas will be captured for use in facilities located in the Industrial Park. Gaston County plans to utilize Combined Heat and Power (CHP) technology from their REC for their Green Energy Eco-Industrial Park.

The County has identified a partial list of businesses it wishes to attract to the Park through reduced-cost heat and excess landfill gas from the REC and adjacent landfill, access to recyclable materials collected at the landfill, and traditional economic development incentives. These include a manufacturer of wood pellets or fire logs to reuse the landfill’s large volume of wood waste, a scrap metal recycling facility, biodiesel production for use by surrounding areas, an anaerobic digester, hydroponic greenhouses, recyclables processing facility, shingle recycling facility, compost facility, glass smelting/processing facility, CHP operation, carbon dioxide stripping and re-use facility, as well as others that share the concept of industrial ecology.
Gaston County Solid Waste and Recycling Division is structured as an enterprise fund, thus pushing the collection and management of trash, recyclables, and special waste to be both effective and efficient. The County measures and tracks amounts of all MSW, C&D, Yard waste, Recyclables, and Special Waste that is collected through all programs, convenience sites, yard waste facility, and landfill. The County also compares yearly recycling rates to help determine where emphasis in programs and public education need to go for the following year. Continued community outreach and education through programs, publications, and professional relationships have lead to large increases in recycling from 2010-2012: 10% increase in yard waste collection/mulch production, 15% increase in pesticides collection, 23% increase in collection of motor oil, 31% increase in corrugated cardboard, 54% increase in the collection of O.T.C. and prescription medications, 61% increase in the collection of cooking oil, 65% increase in collection of plastic, 113% increase in collection of mixed paper, 114% increase in collection of oil filters, and 174% increase in collection of electronic waste.

Landfill and Yard Waste Tonnage

<table>
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<tr>
<th>FY2012 Quarter</th>
<th>Yard Waste</th>
<th>Demo</th>
<th>Commercial</th>
<th>Total</th>
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<tr>
<td></td>
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<tr>
<td>First</td>
<td>568.15</td>
<td>11,800.87</td>
<td>35,948.46</td>
<td>48,317.48</td>
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<tr>
<td>Second</td>
<td>411.68</td>
<td>8,956.61</td>
<td>33,586.72</td>
<td>42,955.01</td>
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<tr>
<td>Third</td>
<td>465.54</td>
<td>8,432.31</td>
<td>31,349.7</td>
<td>40,247.55</td>
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<tr>
<td>Fourth</td>
<td>722.32</td>
<td>10,170.81</td>
<td>35,329.18</td>
<td>46,222.31</td>
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<tr>
<td>Total</td>
<td>2,167.69</td>
<td>39,360.6</td>
<td>13,6214.06</td>
<td><strong>177,742.35</strong></td>
</tr>
</tbody>
</table>

FY 2012 tons collected at Gaston County Landfill and Yard Waste Facilities
LONG-TERM VIABILITY

After considering available options the County elected to build, own and operate the proposed landfill gas to energy facility in order to maximize its long-term environmental and economic benefits. In addition to development of the landfill gas-to-energy facility the County also chose to monetize carbon offsets from methane destruction and to develop an Eco-Industrial Park for private sector green business ventures.

In sponsoring this green partnership it is the County’s goal to create a business environment with a sustainability focus that is compatible with existing solid waste management operations. This is expected to potentially reduce the quantity of materials disposed through additional waste material reuse and recycling, and to catalyze the production of other forms of renewable resources: biodiesel fuel, biogas, liquid propane, heat recovery, recycled construction and demolition materials, etc. The Eco-Industrial Park will also be a venue for education outreach and sustainability research.

Gaston County recognized that its existing solid waste management practices had the potential to be turned into a renewable energy resource rather than contributing to the area’s growing air quality problem through the emission of GHGs from the landfill. Thus the development of a power generation facility using landfill gas as its fuel source has the potential to reduce GHG emissions and to produce green, renewable energy in the form of electricity and heat.

Equivalent Emission Reduction:
- Annual GHG Emissions from 60,753 passenger vehicles
- CO2 emissions from consumption of 32,692,377 gallons gasoline annually
- Carbon sequestration annually by 239,030 acres of US forests

Equivalent Energy:
- Powering of 1,900 homes annually

LFGTE Environmental and Energy Benefits
(Based on 5 year CO2e calculations and 2.8 MW generating capacity)

<table>
<thead>
<tr>
<th>ENVIRONMENTAL BENEFITS</th>
<th>ENERGY BENEFITS</th>
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</thead>
<tbody>
<tr>
<td><strong>Equivalent Emission Reduction:</strong></td>
<td><strong>Equivalent Energy:</strong></td>
</tr>
<tr>
<td>• Annual GHG Emissions from 60,753 passenger vehicles</td>
<td>• Powering of 1,900 homes annually</td>
</tr>
<tr>
<td>• CO2 emissions from consumption of 32,692,377 gallons gasoline annually</td>
<td>GHG equivalencies calculator, EPA</td>
</tr>
<tr>
<td>• Carbon sequestration annually by 239,030 acres of US forests</td>
<td></td>
</tr>
</tbody>
</table>

Total CO2e = 381,087
As part of landfill management practices, groundwater and gas monitoring wells are monitored quarterly by a third party consultant. 27 groundwater wells and 10 gas monitoring wells located on site at locations dependent on site geology, depth to groundwater, surface water features, on-site and off-site structures and sensitive receptors to minimize the risk of groundwater pollution and gas migration.

Leachate management is also an important practice at Gaston County Landfill, as leachate is monitored, collected, and re-circulated back into the landfill. Leachate recirculation is used to enhance the rate and extent of decomposition in the landfill, thus increasing the rate of gas production. Recirculation has played a large part in the viability of the landfill’s gas to energy project, and careful monitoring of leachate produced and re-circulated is vital for optimal performance of the LFGTE system. Both leachate produced and leachate re-circulated are monitored and recorded on a daily basis and aggregated monthly in conjunction with methane flow and concentration to view both long and short term trends.

Compliance Standards

Gaston County Landfill maintains environmental compliance as documented by Solid Waste, Air Quality, Water Quality, and Land Quality inspections from NCDENR. Gaston County’s LFGTE project is also listed and producing credits on the Climate Action Reserve, which holds strict environmental compliance standards. In order for the county to have their carbon credits accepted and listed on the Reserve, the landfill must provide annual proof of environmental compliance.
**2. Financial and Business Management**

**FINANCIAL & OPERATIONAL GOALS**

The mission of the Solid Waste and Recycling Division is to protect the residents and natural resources of Gaston County by providing environmentally friendly, cost-effective and technologically sound waste management strategies through source reduction, recycling and disposal while maintaining a customer friendly and educational atmosphere. The Solid Waste and Recycling Division continues to encourage efficient operational performance maintaining comprehensive waste screening procedures, promoting source reduction and recycling in the work place, and operating the most cost-efficient programs available.

Our goals are to:

- To provide comprehensive Solid Waste Management programs which maximize protection of the environment and efficiently utilize the disposal system.
- To provide Educational programs to the public on responsible waste management, with an emphasis on source reduction, re-use, recycling and environmental awareness.
- To provide attractive and well-maintained facilities and equipment in order to provide waste disposal services promptly to users, to enhance the image of waste management in the service area.
- To improve air quality by reducing greenhouse gas emissions.
- To generate a stable revenue stream from the production of renewable energy and associated environmental attributes.

The performance measures we utilize to gauge the success of our program are:

- To divert at least 200 tons of mixed recyclables per month to be kept out of the landfill.
- To maintain and abate litter on an average of 100 miles of County roads per month through our roadside clean-up program.
- To maintain a minimum of 1,100 lbs/yd³ as compaction rates for the garbage disposed of in the landfill as to optimize air space usage.
- To reduce emissions generated county-wide – to be measured and submitted in annual greenhouse gas emission survey submitted to NC DENR.
- To maintain at least 97% up-time on the generator operations, and measure through kwh produced and delivered to electrical grid.
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**COSTS**

**Total Landfill Costs**

<table>
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<tr>
<th>County Residents Served</th>
<th>Tons collected</th>
<th>Total Cost</th>
<th>Cost/Ton Managed</th>
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<tbody>
<tr>
<td>Landfill (all materials)</td>
<td>200,000</td>
<td>177,742.35</td>
<td>$4,641,748.00</td>
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</table>

**Convenience Sites Costs**

<table>
<thead>
<tr>
<th>Households Served</th>
<th>Tons collected</th>
<th>Total Cost (including overhead)</th>
<th>Cost/Ton Managed</th>
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</thead>
<tbody>
<tr>
<td>Municipal Solid Waste</td>
<td>75,000</td>
<td>9,686.75</td>
<td>$137,718.00</td>
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<td>Recycling Program</td>
<td>75,000</td>
<td>2,559.12</td>
<td>$103,701.00</td>
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<tr>
<td>Yard Waste Program</td>
<td>75,000</td>
<td>6,000.00</td>
<td>$69,000.00</td>
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<tr>
<td>Calculated Totals:</td>
<td>18,085.45</td>
<td>$241,727.00</td>
<td>$17.00</td>
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**PLANNING & FORECASTING**

**Landfill Gas-to-Energy**

The economic vitality of any landfill gas-to-energy project is based on its ability to generate a revenue stream that offsets capital, operation and maintenance costs. Project implementation was formulated around the theory of aggregating revenue streams from the monetization of environmental attributes (carbon offsets and renewable energy credits) and energy generation potential resulting from the capture and collection of landfill gas from the facility’s active and closed MSW landfill units.

Based upon a 20-year economic pro forma, revenue from environmental attributes constitutes approximately 30 percent of the total revenue from the project, while the production of electricity makes up the remaining 70 percent.

Initially, gas well installation and collection system infrastructure construction was accomplished through a series of construction contract packages. Through these packages, the County has installed 72 collection wells throughout two units of the landfill.
Landfill Gas-to-Energy

Funding for the landfill gas-to-energy project was structured based upon an enterprise concept where project revenues offset debt retirement and facility operations and maintenance expenditures. Project financing was secured through the private placement of a recovery zone facility bond with Bank of America Public Capital Corp. The County received a number of proposals from the carbon-offset companies to monetize VERs resulting from the destruction of landfill methane and entered into a multi-year Verified Emissions Reduction Purchase Agreement. The County was able to secure enough revenue from the VERs before the carbon market fell to secure funding for the Renewable Energy Center.

A multi-year purchase power agreement was negotiated with Duke Energy of the Carolinas. Renewable Energy Credit sales were bundled in the agreement with Duke Energy. The grid-interconnect is with the Rutherford Electric Membership Corporation of North Carolina system. The revenue from the power purchase agreement aided in the financial backing for the gas clean-up technology and the initial grading and prepping of the eco-industrial park.
Recycling and Waste

All transactions made at the recycling/convenience sites are done with a GarbCard instead of cash. A GarbCard is a punch card that comes in either $4.00 or $8.00 units and can be purchased at convenience stores. The County incentivizes local convenience stores to sell GarbCards. Each booklet contains forty dollars worth of cards, and the booklets are sold to stores for $35 each. The County hauls all waste brought to the convenience sites directly to the Gaston County Landfill.

Revenue from GarbCard sales is the largest source of revenue from recycling. The revenues received from vendors for collected fiber and scrap metal also make up a large source of recycling revenue.

Due in part to a Community Waste Reduction and Recycling Grant from the state of North Carolina in 2010, Gaston County Solid Waste and Recycling Division was able to provide a “Swap Shop” building at three of the County’s five convenience sites. This affords County residents the chance to “donate” gently used items for other residents who may need that article. We have approximately 1,000+ weekly visits to these convenience sites, and the service is popular and used by the public. By providing an additional outlet for citizens to recycle things that they know could be reused, the swap shop gives them that “one-stop shopping” feeling. If they are headed to the convenience site with recyclables, household garbage and donated goods, it can all be accomplished at the same location.

EMPLOYEE RELATIONS

Gaston County has an extensive Human Relations program that places emphasis on employee relationships and well-being. The HR Department has many programs in place to help employees succeed both in and out of the workplace. Gaston County HR Programs include an Employee Suggestion Program, Employee Safety Program, Sexual Harassment Training, Code of Ethics Policy, and Employee Wellness Program, just to name a few. Internally, the Solid Waste and Management Division has four supervisors who have been trained in a variety of areas, including SWANA Landfill Operations Certification, MOLO – Manager of Landfill Operations, 40-hr HAZWOPER, DOT Hazardous Materials Transportation, Disaster Debris Management Training, and Certified Bioreactor Landfill Manager. Employees are encourage to first go to their direct supervisor to resolve any problems or address concerns, and issues only go to the HR department when necessary.
3. Community Relations

COMMUNITY OUTREACH

Educational programs and pamphlets describing the what, where, how, and why of recycling are continually produced and distributed throughout the County. Programs are presented to various civic groups including Rotary, Optimists, Lions Club, church organizations, nursing homes, and a host of other groups by the Division’s staff. A traveling display has been developed for County buildings, schools and libraries. The display is used to relay a variety of waste information to residents, such as recycling opportunities, waste reduction techniques, household hazardous waste information and buy-recycled opportunities. In addition, the City of Gastonia has a local “Keep America Beautiful” program with staff members that make presentations in all the City and County schools on the importance of waste reduction and recycling. The education of the community is an integral part of the success of a County-wide recycling program.

Partnerships

Gaston County Solid Waste and Recycling compounds its effectiveness throughout the community with partnerships with different companies and organizations including: Sonoco Recycling, Sundrop Bottling and Manufacturing, Gaston Grizzlies, Schiele Museum of Natural History, Gaston County Parks and Recreation, Gaston County Police, Gaston County Schools, and Keep Gastonia Beautiful. Gaston County Solid Waste and Recycling partners with other county entities to help serve residents in a variety of different ways throughout the county. The Solid Waste and Recycling Division partners with Gaston County Police to keep excess medications out of the waste stream and the wrong while a partnership with Gaston County Parks and Recreation helps to create, develop, and maintain trails, ponds, parks, and boat accesses at various parks and recreational areas throughout the county by providing operators and heavy equipment. Solid Waste and Recycling also provides recycling bins and containers to Parks and Recreation for various events that are held, such as Cotton Ginning Days.

The partnership with Sonoco Recycling and Sundrop Bottling and Manufacturing is in efforts to promote school recycling. Sundrop donates their old 55 gallon drums to be used for recycling containers at the schools, and Sonoco Recycling picks up the recycling bins at the schools. It is through these partnerships that we are able to achieve availability of recycling programs in 98% of the county schools.
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Outreach

Gaston County Solid Waste and Recycling partners with Keep Gastonia Beautiful to promote sustainability and recycling information throughout the county. Through this partnership, Twiggy the Tree and Louie the Litterbug are funded and scheduled to attend various schools and programs to teach children the value of our recycling and our environment.

Also through this partnership, along with the Gaston Grizzlies, Riley the Recycling Robot was born. Riley attends home Grizzlies games, encouraging fans to recycle. He also attends other events throughout the county, such as the Christmas Parade to promote the importance of recycling. Gaston County Solid Waste and Recycling also partners with the Schiele Museum of Natural History for various community events, such as Earth Day at the Schiele. Other forms of outreach throughout the community include weekly recycling articles published in the Sunday edition of the Gaston Gazette, Lifestyle section as well as the Gaston County Website which contains information on landfill rates, recycling information, and event updates.

PUBLIC EDUCATION

Classroom training and programs are presented to all grade levels throughout the year. In the past, teacher training has taken place in the middle schools focusing on vermiculure, composting, recycling, reduction and landfilling. In addition, the County provides teacher training for a high school science course (Environmental and Earth Science). The County has trained teachers to help educate their students on the importance of recycling, reducing, and proper disposal of household hazardous waste. Each year, the County and Keep Gastonia Beautiful sponsor telephone book recycling, a Recycled Art Contest and Reuse in the News.

Educational programs are provided by staff members in school settings ranging from litter programs, compost programs, recycling and sustainability programs, and landfill programs. The County also provides classroom training with a working landfill model. This fully functional model allows students to see how a landfill is built with clay, liner, cover dirt, and recirculation pipes while allowing students to place actual classroom trash into the model.

There are additional educational opportunities available on site as well as through the classroom setting. On site landfill and recycling tours are also made available upon request, serving pre-school through community college students. There is also an opportunity for both paid and unpaid internships depending on availability and projects. Internships range from high school credit opportunities to paid college students with Environmental Science backgrounds.
COMMUNITY RELATIONS

Gaston County Solid Waste and Recycling addresses many different issues and problems that arise throughout the county and the region. The Solid Waste and Recycling Division is always on call to help other county departments in need, whether it is using heavy equipment and operators to clear county roads and sidewalks after a storm or lending a helping hand to surrounding park and recreational area grading and development projects. Aside from helping other departments, Gaston County Solid Waste and Recycling is also eager to help out with other community issues, including litter pick-up.

Since rural areas are more susceptible to the illegal disposal of waste and bulky trash, as well as roadside litter, the County established a program to address these issues. The County utilizes a private contractor and inmate crews to provide roadside clean-up of litter and small quantity wastes dumps. Gaston County has also implemented a charge of $52 for each load entering the landfill that is unsecured to encourage residents and businesses alike to comply with the law.

CUSTOMER SERVICE

Gaston County Solid Waste and Recycling prides itself on its customer service approach. Whether staff is dealing with vendors, contractors, engineers, truck drivers, or everyday citizens, the County has a “customer first” approach that is evident by the smooth operations of the landfill and other facilities. Multiple staff members have won County Employee of the Year awards for the dedication and work, highlighted by their customer service approach and willingness to help other employees and departments. The Solid Waste and Recycling Administrator, Landfill Administrator, Material Handling Supervisor, and Scalemaster employees have all been awarded “Gaston County Employee of the Year.”
2014 Excellence Award Entry, Integrated Solid Waste Management Systems, Gaston County Solid Waste and Recycling

Appendices: Awards and Recognition

2014 EPA LMOP Community Partner of the Year Award

2013 CRA Local Government Award

2013 CRA Recycler of the Year Award

2011 NC Mobile CARE Award

NC Mobile CARE Awards
April 13, 2011

Background:
The NC Mobile Clean Air Renewable Energy (CARE) awards were created in 2006 to recognize outstanding individuals and organizational efforts at reducing transportation related emissions. The NC Solar Center/NC State University, with support from the NC Department of Transportation, organized the 5th annual Mobile CARE awards as part of the Clean Fuel Advanced Technology Project.

Candidates in four categories: individual, Fleet, Fuel/Tech Provider and Policy/Organization were sought and after evaluating more than two dozen nominations, the judges narrowed the winners to an impressive group of six. Some of the criteria the judges used to make their decision included:

- Expanding educational opportunities
- Conducting outreach
- Changing policies
- Length of involvement in alternative fuel/vehicle activities
- Perceived risk related to involvement
- Diversity of strategies/technologies employed