

**Jackson County**

**Municipal Solid Waste Planning Region**

**2009 Qualitative Review**



**Tennessee Department of Environment and Conservation**  
**Division of Solid and Hazardous Waste Management**  
**Solid Waste Assistance Programs**  
**401 Church Street, 5th Floor**  
**Nashville, Tennessee 37243**

## Introduction

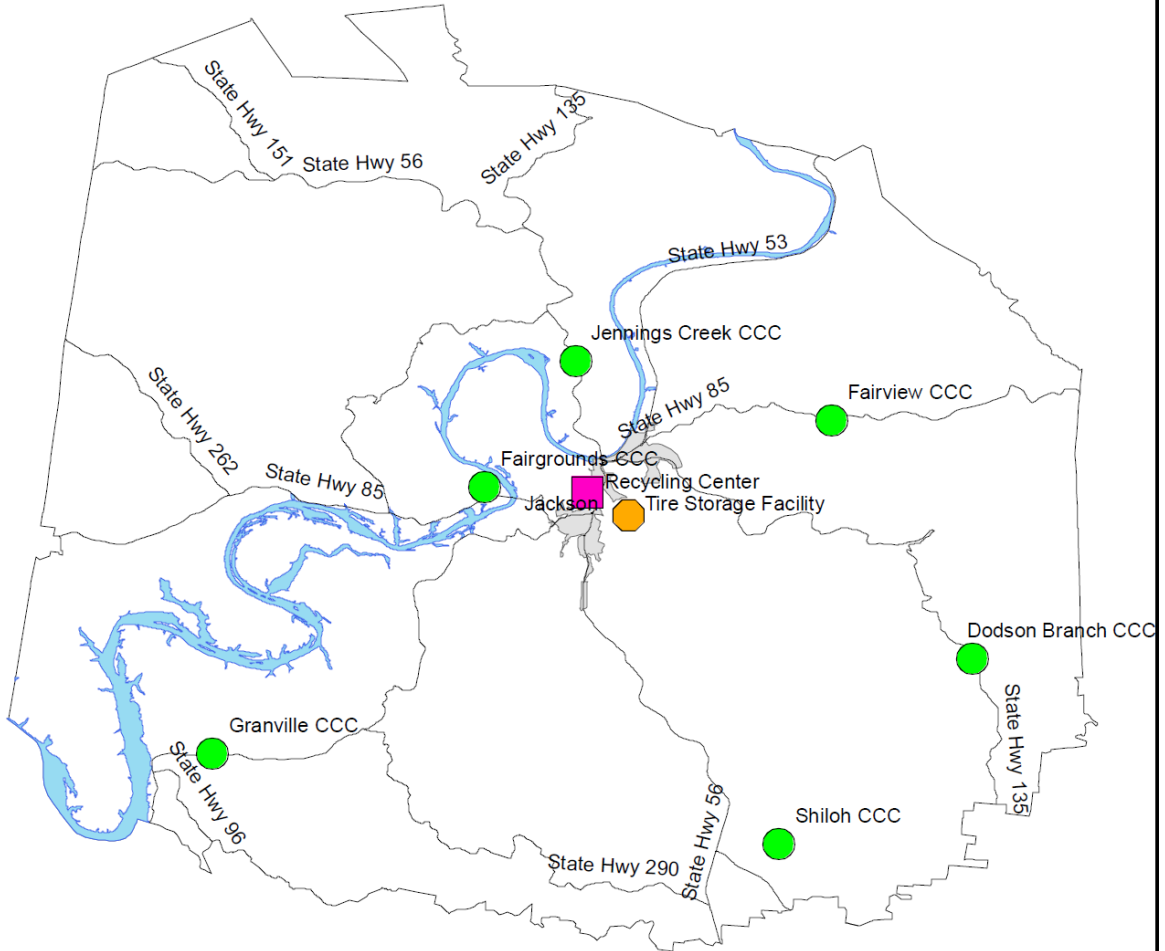
Tennessee's *Solid Waste Management Act of 1991* (SWMA) required solid waste regions to achieve a twenty-five percent (25%) waste reduction and diversion goal for solid waste going into Class I landfills by December 31, 2003. Under T.C.A. § 68-211-861, the basis for determining compliance with this goal was based on a per capita reduction measurement that may be adjusted for economic or population trends, or by a qualitative assessment that evaluates whether the region had comparable progress to those of similar regions that made the goal. Until 2003, the need to define the qualitative assessment was not necessary since there were no regions out of compliance. After the 2003 reporting period, 34 regions failed to meet the 25% waste reduction and diversion goal, which necessitated the promulgation of rules describing the methodology for qualitative assessment of regions failing to meet the per capita base year reduction and diversion. These rules became effective August 6, 2006.




The first step in the qualitative assessment process is to determine if the failing region met the 25% waste reduction and diversion goal using the real-time methodology. This method is calculated annually by dividing the total amount recycled and diverted from Class I landfills by the total generated waste stream. If the region did not meet the goal through this process, the region is then reviewed in order to determine if a "good faith" effort was made toward compliance and if their programs and solid waste infrastructure are qualitatively equivalent to like regions of similar population and economic characteristics who have achieved the goal.

In 2009, five regions failed to meet the goal by either base year or real-time methods. With a base year reduction of 7% and a real-time diversion rate of 5%, the Jackson County Municipal Solid Waste Planning Region was one of these regions. The regions selected for comparison with Jackson were Houston and Perry.

On December 9th, 2010, Division of Solid and Hazardous Waste Management staff Nick Lytle and Ashby Barnes visited with Jackson County Executive Charlie Hix and Solid Waste Manager Charlie Martin to discuss all facets of the solid waste management programs. Visits were made to the convenience centers and recycling center, as well as the tire storage facility. The equipment at these facilities was examined and noted.

# Jackson County Solid Waste System



Facility Type	
	Convenience Center
	Recycling Center
	Tire Storage Facility

As of 5/1/2011

## **Solid Waste Facilities and Infrastructure**

Every county in Tennessee is required by law to provide a minimum level of waste reduction and waste collection assurance. Jackson County's solid waste collection and recycling programs serve a population of 10,875 and an area of 309 square miles. The minimum number of convenience center sites required by state statute, based on Jackson's population, is calculated at one location.

County residents have the option of using six convenience centers at the following locations:

2230 York Hwy (Fairview)  
Cummins Mill Road (Shiloh)  
1010 Gladdice Hwy (Fairgrounds)  
16146 Dodson Branch Highway (Dodson Branch)  
1400 Jennings Creek Highway (Jennings Creek)  
6026 Granville Highway (Granville)

These centers are open 8 am to 6 pm Monday, Wednesday, Friday and Saturday. The hours shift one hour earlier during the winter. The convenience centers are well maintained and are equipped with sufficient open top front loader receptacles to handle the waste. The waste is compacted into a front loader truck and hauled to Upper Cumberland Landfill in Moss, Tennessee.



**Front Loader Collection Containers at Convenience Center**

Each of the six convenience centers use a mesh wall trailer to collect mixed PET and HDPE plastic containers from the public. No fiber is collected from the public at these convenience centers. Each convenience center maintains a used oil collection

container. All publicly collected tires are deposited at the county's permitted tire storage facility.

The county recycling facility is located 133 Borden Street in a converted dairy building. It contains a single vertical baler that is used primarily for baling mixed plastics from the convenience centers. The Borden Street facility is the only location managed by the county where residents may drop off mixed metals and appliances. A roll off container is stationed there and maintained by Cooper Recycling of Livingston, Tennessee for these materials.

Plastics baled at the recycling center are stored and sold to various buyers. The most recent material load was sold to Rock-Tenn Recycling. The marketing of the plastic commodities is performed directly by the county.



**Baled Plastic Stockpiled at County Recycling Center**

The county employs twelve part-time convenience center operators and uses public works employees to haul waste from the convenience center to the landfill.

Due to budget constraints, the city of Gainesboro discontinued all management of municipal solid waste during 2009. Previously, the city provided curbside collection of waste to its residents.



**Cluttered & Unused Equipment and Material at Landfill**

## Financial Information

T.C.A. § 68-211-874(a) states that each county, solid waste authority and municipality shall account for financial activities related to the management of solid waste in either a special revenue fund or an enterprise fund established expressly for that purpose. According to the Fiscal Year 2009-2010 Annual Financial Report of Jackson County Tennessee performed by the Tennessee Comptroller of the Treasury, the county operates a special revenue fund to account for its solid waste program. The solid waste financial information was examined by department staff.

### Revenues

Local Taxes	\$411,155
General Service Charges	\$17,939
State of Tennessee (Grants)	\$3,887
Total	<u>\$432,981</u>

### Expenditures

Waste Pickup	\$406,233
Convenience Centers	\$168,531
Other Waste Disposal	\$8,369
Total	<u>\$583,133</u>

\* Excess (Deficiency) of Revenues..... (\$150,152)

Fund Balance, July 1, 2009	\$24,818
Transfers in and Notes Issued	\$208,891
Fund Balance, June 30, 2010	\$83,557

Jackson County's estimated total expenditures for Fiscal Year 2009-2010 were \$13,036,052 and the total revenues were \$10,703,010. The county's solid waste expenditures were \$583,133 and the solid waste revenues were \$432,981. The solid waste expenditures were 4.5% of the total county expenditures and the solid waste revenues were 4% of the total county revenues.

From a solid waste management standpoint, the expenditures and revenues appear to be in line with state mandates. Jackson County's solid waste revenues and expenditures were found to be financially solvent.

## **Environmental Field Office Report**

The Cookeville Environmental Field Office has not found any environmental violations at any of the counties six permitted County Convenience Centers or Tire Storage Facility in the last ten years.

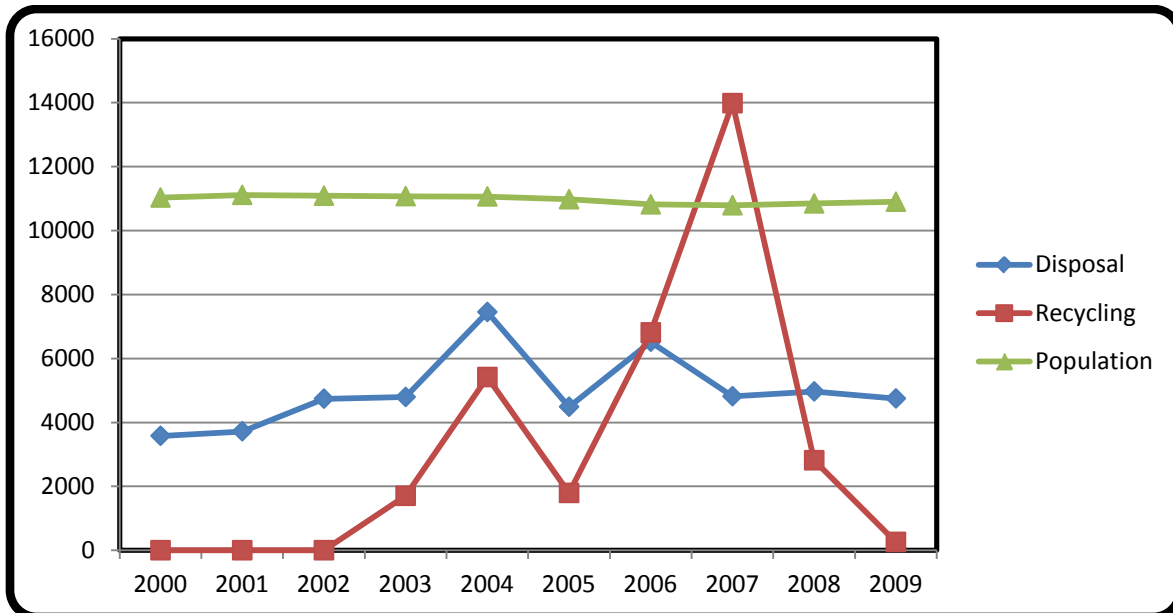
## **Solid Waste Planning Board**

The Solid Waste Management Act states that every solid waste region in the state must appoint a regional municipal solid waste planning board, composed of representatives of each county and each city which participates in the solid waste planning region. The Municipal Solid Waste Planning Region Board is responsible for accurately reviewing and approving annual progress reports and is instrumental in the approval process for any new solid waste permits for the region. At a minimum, having an active board that meets with regularity is vital to complete these tasks. The planning board is also responsible for developing MSW solid waste plans, assessing disposal capacity, collection assurance, providing for solid waste education, and assisting in other aspects of integrated solid waste management. Duties and powers of the municipal solid waste planning board are spelled out in T.C.A. § 68-211-813 thru 815.

Jackson County Public Works Director Charlie Hix stated that the solid waste planning board has met twice in the second half of calendar year 2010. Recently the board has made decisions concerning taking over all solid waste management for the city of Gainesboro after the city ended collection for its residents.

## **Analysis of Local Conditions**

In 1995, the State of Tennessee averaged 1.3 tons per capita of municipal solid waste placed into Class I landfills. By contrast, in 1995, the Jackson County Municipal Solid Waste Region (the Region) reported 4,384 tons of waste going into Class I landfills, or 0.41 tons per person. A 25% reduction of this value would require a disposal rate of 0.30 tons per person per year. The reported Class I waste was 4,747 tons (0.44 tons per person) in 2009. The State of Tennessee averaged 1.05 tons per capita in 2008. Over the last 13 years, the Region's population and Class I disposal has been mostly consistent with only a few anomalies.



The chart above shows the historic state accepted values for recycling and disposal in Jackson County in tons along with population. Starting in 2004, recycling data provided in the County Recycling Report of the Annual Progress Reports has not been consistent while disposal tonnages have. In 2006 and 2007, a large amount of commercial recycling was reported in the form of mixed scrap metal. In 2008 and 2009, the Region did not report any commercial recycling in the Annual Progress Report.

The 2008 Annual Progress Report did show significant tonnage of mixed plastics and over a thousand tons of used oil recycled. These values were only recently discovered and were the result of confusion in conversion factors. In light of this discovery, Jackson County only achieved a Real Time Recycling and Diversion Rate of 5% rather than the accepted and published diversion rate of 36% calculated for the 2008 calendar year.

Another reason for the erratic recycling report values has to do with multiple authors over the years and failure to gather and collect recycling data in a consistent manner from private entities.

Many counties in Tennessee with populations near or below 10,000 people also have difficulty providing robust recycling programs for their residents; however, notably absent from the Region is the availability of post consumer recycling of fiber and paper products. While it is not uncommon for counties of similar population to have limited fiber recycling options, it is rare for a county to offer plastic recycling and not paper or old corrugated cardboard recycling. This lack of service is due to inadequate infrastructure at the convenience centers to collect and store this material out of the elements. The county does not have the budget to purchase and transport additional weather resistant containers for fiber from the six collection points to the recycling center.

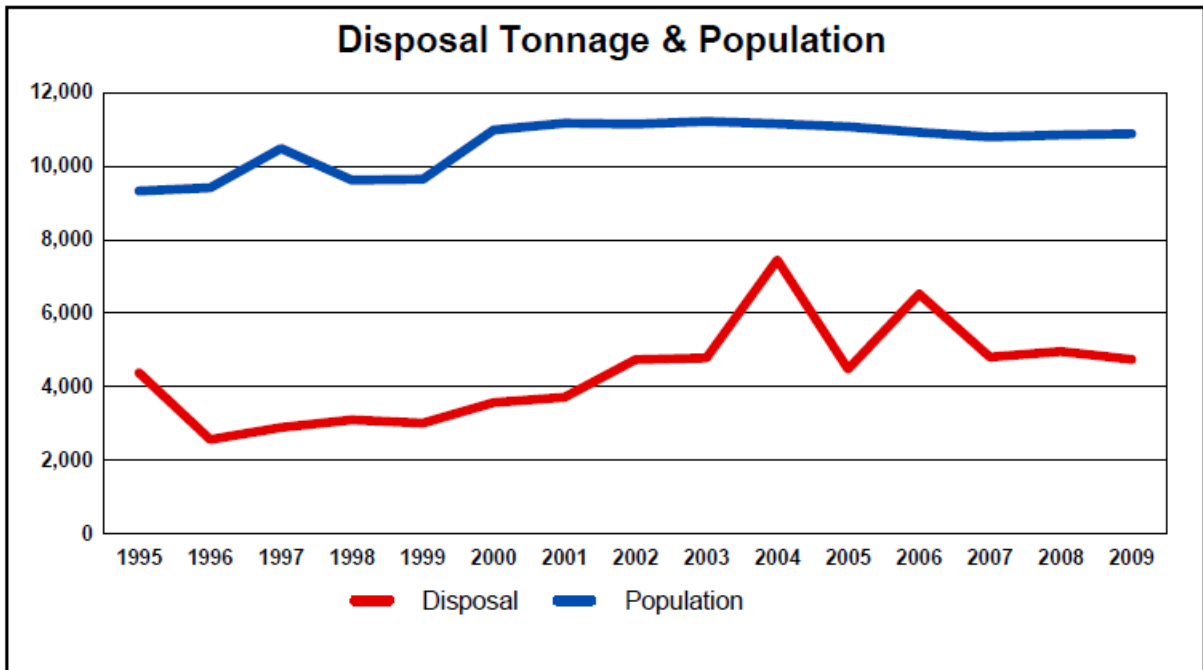
The city of Gainesboro has recently suspended all city provided solid waste services including curbside pickup of residential municipal solid waste. Residents now have to privately contract with local waste haulers or utilize the county convenience centers. The county has recently seen a large increase the amount of waste received at the convenience centers. The overall tonnage of waste from the region arriving at Upper Cumberland Landfill has remained unchanged.



Used Oil Container at Convenience Center

## Statistics

Year	Population	Disposal	Tons Per Capita
1995	9,326	4,384	0.47
1996	9,409	2,577	0.27
1997	10,477	2,899	0.28
1998	9,616	3,110	0.32
1999	9,643	3,019	0.31
2000	10,984	3,579	0.33
2001	11,162	3,720	0.33
2002	11,138	4,740	0.43
2003	11,208	4,793	0.43
2004	11,146	7,450	0.67
2005	11,072	4,487	0.41
2006	10,918	6,524	0.60
2007	10,791	4,816	0.45
2008	10,847	4,967	0.46
2009	10,875	4,747	0.44



## Comparison Counties

Based on the Jackson County Municipal Solid Waste Planning Region's reported Class I disposal and tons diverted, the region failed to meet the 25% waste reduction and diversion goal in 2008. Therefore, the Department is required to assess the activities and expenditures of the region, and local governments in that region, to determine whether the region's program is qualitatively equivalent to other regions that met the goal, and whether the failure was due to factors beyond the control of the region. This qualitative assessment method, prescribed by the Department and approved by the Municipal Solid Waste Advisory Committee, was promulgated as a rule in accordance with the provisions of the Uniform Administrative Procedures Act, compiled in Title 4, Chapter 5. The two regions selected for the comparison were Houston and Perry.

HOUSTON COUNTY MUNICIPAL SOLID WASTE PLANNING REGION achieved the solid waste reduction goal in 2009 with a base-year per capita reduction of 3% and a real-time diversion rate of 87%. The county had a 0.49 per capita disposal rate for 2009.

Houston County has a population of 8,000 and is located in Upper Middle Tennessee, bordered on the north by Stewart County, on the east by Montgomery and Dickson Counties, on the south by Humphreys County, and on the west by the Tennessee River. The county seat is the city of Erin, population 1,400, which lies 85 miles west of Nashville. The only other incorporated municipality in the county is Tennessee Ridge, population 1,300.

Houston County's solid waste collection program consists of one convenience center, centrally located on Fire Tower Road near Erin. The center is open to the public from 8 am to 6 pm seven days per week and serves the entire population of Houston County, including the two municipalities of Erin and Tennessee Ridge, neither of which provides any type of solid waste collection service.

This site serves as a quasi transfer station since all county waste left there by individual residents and by private haulers is transported to the Bi-County Landfill in neighboring Montgomery County. The site also hosts a collection center for recyclables, including: ferrous and non-ferrous scrap metals and white goods - sold to Bordeaux Metals; mixed paper and old corrugated containers-sold to Mid-South Paper; aluminum cans - sold to Brakes Recycling; used oil - sold to H & H Oil Recycling; and used tires - hauled to Bi-County Recycling for disposal. The county does not include anti-freeze and batteries in its public collection program as there are adequate private collectors for these materials. The county would like to add paint and e-scrap to its recycling collection if it can get help with the financing through a state grant. The materials recovery facility (MRF) consists of a limited amount of recycling related equipment housed in a shed and is in need of extensive renovation. The recycle equipment consists of a vertical baler, a skid-steer loader, platform scales and various types of containers including roll-offs and Gaylord boxes. The materials are marketed by the county mayor and the solid waste director, usually on a month-by-month basis.

Houston County's Solid Waste/Sanitation Fund contained a balance at the beginning of Fiscal Year 2008-2009 of \$212,219. The Fund had an end of year deficiency of (\$37,332). The county's estimated total expenditures for Fiscal Year 2008-2009 were \$6,984,661 and the total revenues were \$6,782,334. The county's solid waste expenditures were \$255,120 and the solid waste revenues were \$217,788. The solid waste expenditures were 3.2% of the total county expenditures and the solid waste revenues were 3.7% of the total county revenues.

PERRY COUNTY MUNICIPAL SOLID WASTE PLANNING REGION achieved the solid waste reduction goal in 2009 with a base-year per capita reduction of 42% and a real-time diversion rate of 28%. The county had a 0.55 per capita disposal rate for 2009.

Perry County, population 7,826, is located in Western Middle Tennessee, bordered on the north by Humphreys County, on the east by Hickman and Lewis Counties, on the south by Wayne County, and on the west by the Tennessee River. The county seat is the city of Linden, population 908. The only other incorporated municipality in the county is Lobelville, population 897.

Perry County operates a combined transfer station and convenience center in Linden, and an additional convenience center located in Lobelville. Each location utilizes front-end loader boxes to collect municipal solid waste. After collection and compaction, the municipal solid waste is taken from the convenience centers to the transfer station for further consolidation. The waste is then transported to Waste Services of Decatur Landfill located in Decatur County. The county accepts corrugated cardboard (OCC), mixed metals, tires and used oil in addition to municipal solid waste. Mixed metals and bulk items are collected in a large roll-off at the transfer station. Cardboard is collected and transported to the transfer station where it is prepared for market through the use of a vertical baler. Both convenience centers have used oil collection tanks. Tires are accepted at the Linden Convenience Center and Transfer Station.

Additionally the county operates five public collection or "green box" sites located in the Rock House, Deer Creek, Woods Prong, Lick Creek and Roans Creek communities. These sites offer no recycling options, are unmanned, have no fencing and consist of several front-loader boxes.

In addition to the public collection facilities, the county operates a Class III landfill located between Lobelville and Linden. The landfill accepts waste from county residents only.

The cities of Lobelville and Linden operate curbside waste collection routes inside the city limits, each utilizing one ton rear-loader packer trucks and two man crews. The collected waste is transported to the county's transfer station. This is the extent of the municipalities' handling of municipal solid waste. Neither city operates a recycling program.

The county's estimated total expenditures for Fiscal Year 2009-2010 were \$8,854,282 and the total revenues were \$9,131,792. The county's solid waste expenditures were \$518,593 and the solid waste revenues were \$491,243. The solid waste expenditures were 5.9% of the total county expenditures and the solid waste revenues were 5.4% of the total county revenues.

### **Qualitative Equivalency**

As stated earlier, T.C.A. § 68-211-861 requires each municipal solid waste planning region to achieve a 25% waste reduction and diversion goal for solid waste going to Class I landfills. The Jackson County Municipal Solid Waste Planning Region's failure to realize this goal caused the Department to assess the Region's solid waste reduction program activities and expenditures to determine if it was qualitatively equivalent to other comparative regions that did reach the reduction goal.

During this qualitative assessment and visit to Jackson County and the city of Gainesboro by Department staff, all areas of the Region's waste reduction programs were determined to be qualitatively equivalent to those of the comparative regions. Jackson County and the city of Gainesboro have viable waste collection and disposal systems with an adequate number and location of collection facilities. Department staff noted some areas of the system that can be improved. These areas are discussed further in the "Recommendations for Improvement" section of this document.

### **Needs Assessment**

T.C.A. § 68-211-811 required the development districts to submit a district needs assessment for each county in the district by September 30, 1992. These needs assessments, to be conducted by the development district staff, shall be revised to reflect subsequent developments in the district by April 1, 1999, and every five years thereafter.

According to the Needs Assessment, prepared by the Upper Cumberland Development District in January 2011; Jackson County has implemented effective diversion measures over the years. Between 2005 and 2008, they diverted more than the state mandated percentage. However, in recent years the partnership with commercial and industrial sectors has not been maintained to a degree that assists the Region in meeting its waste reduction or diversion goal of 25%.

The Needs Assessment states that businesses like Safe Way and Eaton do have waste reduction programs, but the county did not request their program numbers. During the drafting of the Needs Assessment by the Upper Cumberland Development District, the County Executive's office stated that the reason that the county did not attempt to contact their local businesses to collect their recycling totals was lack of knowledge to do so.

To ensure that this does not happen again, the county is placing a note in the manual for solid waste employees.

Another factor contributing to the lower than expected recycling rates is the lack of a strong environmental education program that takes into consideration all socio-economic aspects of the Jackson County population. Another important key to building a strong recycling program is an expansion of the existing commodities accepted at the convenience centers for recycling. Commodities in the fiber family like office paper or old corrugated cardboard are easy and inexpensive to add and provide a good return of the investment.

According to the Needs Assessment, Jackson County faces many challenges in accurately calculating the amount of waste transported to the Landfill. Waste generated from businesses like marinas could easily be disposed at the convenience centers, but due to governmental policies banning commercial waste, these businesses must utilize private haulers. These private haulers operate throughout the plateau region, including into Kentucky, and this creates a potential for inaccurate “origin of disposal” reports.

After assessing the financial data of the Jackson County Solid Waste Department, it is the suggestion of the Needs Assessment that Jackson County appropriate funding to purchase a cardboard baler to improve their waste reduction and diversion rate. This purchase will free up the baler currently set up for plastic recycling and improve efficiency. There are ongoing discussions with solid waste staff and the Upper Cumberland Development District.



**Vertical Baler at Recycling Facility**

The Needs Assessment reports that with the discontinuation of trash pick-up by the city of Gainesboro in October 2010, the county will need to reassess the solid waste

system. The Region needs to take up this issue with the city of Gainesboro and Jackson County to discuss solid waste management needs of its citizens. The Gainesboro Mayor, John Fox, said that his citizens would be receptive to increasing their recycling if the convenience centers were equipped to handle the recycling.

Because of limited quantities of materials, the use of milk runs or feeding material into a central area collection facility would improve the marketability of commodities for the region. The needs assessment suggests that the Dodson Valley convenience center be set up as a “Hub” with Putnam County. This collaboration would allow a smaller community to benefit from the market rates in a larger region.

The Upper Cumberland Development District believes that a recommitment to recycling education will bring an increase in diversion. An analysis of recycling education, the current recycling program, successes and shortfalls is needed to continue program improvement. The Upper Cumberland Development District staff find in their assessment that Jackson County is more than capable of achieving the mandated 25% diversion rate, while meeting all rules and regulation for solid waste management.

### **Recommendations for Improvement**

It is unlikely that Jackson County Region can develop a larger waste reduction program in the short term. However, there are steps that the Region can take to lay the groundwork for one in the future.

- Convenience Center operators should emphasize the separation of post consumer plastic containers and have prominently displayed signs reinforcing this.
- The county should take steps to collect corrugated cardboard at each convenience center. This material has a high monetary return rate, is clean and is easily recyclable. This material could be baled in the county’s existing vertical baler more easily than the plastic containers which are prone to contamination and are difficult to compact.



**Plastic Recycling Trailer at Convenience Center**

- The existing County Recycling Center is small and is cluttered with older equipment and scrap items making it difficult for efficient daily workflow including any future expansions of fiber collection and baling. Located inside this building are an unused glass crusher and various other pieces of equipment apparently not in use.
- Improve storage of commodities at the County Recycling Center. The building contains a stockpile of baled plastics that takes up a considerable amount of space. Without reorganizing this facility, any additional operations will be difficult.
- The Region should increase education and outreach efforts to develop an understanding of the importance of waste reduction among its citizens.
- The Region should focus more recycling education efforts within the local schools. Waste reduction and recycling education programs in the local schools are effective in creating strong recycling programs in the future. If students have the opportunity to participate in recycling paper at school, they frequently become invested and encourage their parents to recycle at home.
- The county, with help from Upper Cumberland Development District, needs to annually evaluate its collection, transportation, and storage opportunities for a recycling program.

## **Conclusion**

T.C.A. § 68-211-861 requires each municipal solid waste planning region to achieve a twenty-five percent (25%) waste reduction and diversion goal for solid waste going to Class I landfills by December 31, 2003. The Jackson County Municipal Solid Waste Planning Region failed to meet the required goal in calendar year 2009. This failure caused the Department to qualitatively assess the Region's solid waste reduction program activities and expenditures to determine if it was qualitatively equivalent to other comparative regions that did reach the goal.

After reviewing the Region's programs, finances, infrastructure, education and staffing; it is the opinion of the Department that the Jackson County Municipal Solid Waste Planning Region has similar waste reduction and disposal programs in design and implementation, and are, therefore, qualitatively equivalent to the comparative regions and are making a "good faith" effort toward meeting the waste reduction and diversion goal.