

CARROLL COUNTY SOLID WASTE PLANNING REGION

Solid Waste Needs Assessment Update

December 2013

As required by The Solid Waste Management Act (T.C.A. §68-211-811).



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Solid Waste Management
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INTRODUCTION

In an effort to coordinate and plan for safe, efficient solid waste disposal in the state, the Tennessee General Assembly enacted several pieces of legislation, which are compiled in Title 68, Chapter 211 of the *Tennessee Code Annotated*. To comply with the requirements of this chapter, all local governments must engage in specified planning and organizational activities (See the Solid Waste Management Act of 1991, T.C.A. §§ 68-211-801 through 68-211-874).

Regional Solid Waste Management Planning

To begin implementation of the Solid Waste Management Act, counties were instructed to form solid waste regions (single or multi-county) and establish a solid waste board. Each region was required to formulate a 10-year plan for collection and disposal of solid waste in the area and submit this plan to the Tennessee Department of Environment and Conservation. Each municipal solid waste region must submit an annual progress report and 5-Year Plan Update (T.C.A. § 68-211-814). The plan, and any revised plan, submitted by each region must be consistent with the state solid waste plan and with all relevant state laws and regulations.

At a minimum, each plan must contain the following items:

- Demographic information and projections;
- Analysis of economic activity in the Region;
- Characterization of the waste stream;
- Projection of solid waste generation;
- Evaluation of collection systems within the Region;
- Current system analysis of waste streams, collection capability, disposal capability, costs, and revenues;
- Description of waste reduction activities designed to attain the required 25 percent reduction in solid waste;
- Description of education initiatives designed to achieve the goals stated in the statute; and
- Any other information the commissioner of the Department of Environment and Conservation deems relevant.

In order that the regional planning effort is implemented on a solid foundation of relevant and objective knowledge of local conditions, the Act requires the Development Districts to coordinate, conduct and maintain a Needs Assessment for each solid waste region. This Assessment shall be revised every five years.

SECTION 1:

DEMOGRAPHIC INFORMATION AND PROJECTION

Provide a table and chart showing the region's population during the last ten (10) years with a projection for the next five (5) years. Provide a breakdown by sub-table and sub-chart, or some similar method to detail all county and municipality populations. Considering the trends, discuss the affect on the solid waste infrastructure needs over the next five (5) years.

Population Trends in Carroll County

According to the 2010 U.S. Census Bureau, Carroll County's population was 28,522, which was a decrease from the estimated population of 29,096. The 2012 population is estimated to be 28,390. As shown on Table 1.1 on the next page, Carroll County has shown a steady decrease in population. Much of this decline was due to the loss of many manufacturing jobs in the county. This population decline can result in a declining property tax base and loss of sales tax revenue.

The U.S. Census Bureau is projecting that Carroll County's population will continue to decrease during the next five years. Since the unemployment rate in Carroll County has remained high during this current year, the population may actually decline even more.

Based on the latest U.S. Census Bureau statistics, 17% of Carroll County's population is 65 years of age and older and 22% is under the age of 18. These figures account for nearly 40% of Carroll County's total population.

If the population does decrease in Carroll County, the solid waste disposal by the residents should also decrease accordingly. The Solid Waste Director and his staff will continue to promote recycling and reuse to maintain the waste diversion goal.

If more recycling is conducted at the Recycle Center, an additional warehouse to store increased volumes of paper will need to be constructed within the next five years. The need for this warehouse is current but funding is not available at the current time.

TABLE 1.1 Historic and Projected Population Trends (2002 thru 2018)

Year	County Population	Atwood	Bruceston	Clarksburg	Hollow Rock	Huntingdon	McKenzie	McLemoresville	Trezevant	Unincorporated
2002	29,218	987	1,516	377	952	4,251	5,340	305	901	14,589
2003	29,214	983	1,503	375	948	4,228	5,441	303	897	14,536
2004	29,111	979	1,493	374	945	4,193	5,445	302	893	14,487
2005	28,711	966	1,467	369	932	4,132	5,378	297	881	14,289
2006	28,784	970	1,466	371	936	4,149	5,385	299	884	14,324
2007	28,843	974	1,464	373	940	4,155	5,394	300	888	14,355
2008	28,719	978	1,462	375	944	4,160	5,396	301	890	14,213
2009	29,096	984	1,460	377	948	4,164	5,398	302	892	14,571
2010	28,522	938	1,478	393	718	3,985	5,053	352	859	14,746
2011	28,457	936	1,474	391	717	3,976	5,043	351	858	14,711
2012	28,390	930	1,470	390	713	3,955	5,125	350	852	14,065
2013	28,275	928	1,464	388	710	3,939	5,199	349	848	14,450
2014	28,150	924	1,458	377	708	3,922	5,218	348	846	14,349
2015	28,025	922	1,452	386	705	3,915	5,224	346	844	14,231
2016	27,970	918	1,448	385	703	3,900	5,200	346	842	14,228
2017	27,925	915	1,445	384	701	3,890	5,189	344	840	14,217
2018	27,895	913	1,440	383	699	3,886	5,182	344	838	14,210

Sources: Historic data and projections are based on data from the U.S. Census Bureau.

SECTION 2:

ECONOMIC ACTIVITY WITHIN THE REGION

Provide a table and chart showing the region's economic profile for the county and its municipalities for the last ten (10) years with a projection for the next five (5) years. This can be accomplished by using the following economic indicators:

- Taxable sales, property tax generation, and per capita income
- Evaluation by break down of each economic sector
- County or municipal budgeting information
- Other commonly accepted economic indicators

Economic Profile of Carroll County

As shown in Table 2.2 on the following page, the Carroll County economy is very weak when compared to the state and national averages. Unemployment rates have ranged from a low of 6.3% in 2006 to a high of 15.9% in 2009.

The current unemployment rate in Carroll County is 12.2% as of October 2013. Many manufacturing companies have either closed down completely or reduced the work force. Hopefully, this unemployment rate will decrease once the nation's economy improves.

The average total wages in all industries in Carroll County was \$31,463, which is lower than the state average of \$43,955. The average industry wage is also significantly less than the industry average in the nation of \$49,289.

The top eight county manufacturers are listed in the following table:

TABLE 2.1 Carroll County Top 10 County Manufacturers

Manufacturer	Product	# Employed
Norandal USA, Inc.	Aluminum Sheet Foil	250
Axia, Inc.	Vinyl Coated Dishwasher Baskets	230
Windsor Republic Door, Inc.	Metal Doors and Frames	216
Behlen Country	Cattle Gates, Feeders, etc.	150
Profile Holdings, Inc.	Sheet Metal Fabricator	150
Bill Sills Sportswear	Sportswear Clothing	70
Doane Pet Care Company	Dog & Cat Food & Supplements	70
McKenzie Valve & Machining	Valves for Rail Cars	30
Cut Right Wood Products, LLC	Wood Frames for Furniture	25
Dienamic Tool & Die, Inc.	Blast Furnace – Steel Works	15

Two of the top five manufacturers in Carroll County shut down in 2009. New Generations Furniture Co. and Dana Corporation shut their doors leaving approximately 560 people out of work. Brad Hurley with the Carroll County Chamber of Commerce said manufacturing was down about 40% at the current time in Carroll County.

TABLE 2.2 Carroll County Historic and Projected Economic Indicators

Labor Force Data					Non-Farm Wage and Salary Employment									Per Capita Income	Total Retail Sales
Year	Total	Emp.	Unemployed Total	Rate(%)	Total	Goods Producing			Service Producing						
						Total	Mfg	Other	Total	Trade	Health	Govt.	Other		
2002	12,200	10,730	1,470	12.0%	8,210	2,290	2,010	280	5,920	1,210	1,480	1,630	1,600	21,639	171,844,434
2003	13,870	12,570	1,300	9.4%	8,170	2,240	2,000	240	5,930	1,080	1,420	1,600	1,830	22,610	180,683,318
2004	13,810	12,670	1,140	8.3%	8,380	2,280	2,030	250	6,100	1,040	1,460	1,660	1,940	22,511	193,168,566
2005	13,710	12,670	1,040	7.6%	8,810	2,320	2,050	270	6,190	1,080	1,460	1,680	1,970	24,487	196,970,671
2006	13,960	13,070	890	6.3%	8,730	2,380	2,120	260	6,350	1,090	1,470	1,690	2,100	25,466	203,697,336
2007	13,660	12,760	900	6.6%	8,560	2,220	1,970	250	6,340	1,120	1,550	1,680	1,990	26,900	211,207,616
2008	13,780	12,520	1,260	9.2%	8,260	1,860	1,640	220	6,400	1,160	1,690	1,670	1,880	28,902	228,394,852
2009	13,750	11,560	2,190	15.9%	7,450	1,230	1,040	180	6,230	1,060	1,780	1,670	1,720	28,216	203,797,081
2010	14,050	11,990	2,060	14.6%	7,610	930	780	150	6,680	1,080	1,930	1,710	1,960	29,227	208,669,698
2011	13,940	12,230	1,710	12.2%	7,770	930	770	160	6,840	1,060	2,120	1,670	1,990	30,057	227,507,567
2012	13,800	12,300	1,500	10.9%	7,900	920	760	160	6,980	1,000	2,360	1,690	1,940	30,990	230,638,679
2013	13,700	12,020	1,680	12.2%	7,800	900	750	150	6,900	980	2,340	1,680	1,900	31,850	234,523,147
2014	13,650	11,950	1,700	12.4%	7,780	890	740	150	6,890	980	2,330	1,680	1,900	32,775	237,123,753
2015	13,630	11,940	1,690	12.4%	7,770	880	730	150	6,890	980	2,330	1,680	1,900	33,680	240,632,456
2016	13,620	11,950	1,670	12.3%	7,760	880	730	150	6,880	980	2,330	1,680	1,890	34,555	243,367,159
2017	13,600	11,940	1,660	12.2%	7,750	870	730	140	6,880	980	2,330	1,680	1,890	35,640	245,869,326
2018	13,590	11,940	1,650	12.1%	7,730	860	720	140	6,870	970	2,330	1,680	1,890	36,538	247,920,753

Sources: Historic employment data are from the Tennessee Department of Labor and Workforce Development, per capita income data is from the U. S. Bureau of Economic Analysis, and retail data is from the Tennessee Department of revenue. All projections are by the NWTDD staff.

SECTION 3:

SOLID WASTE STREAM CHARACTERIZATION

Elaborate on the region's solid waste stream. Compare the current waste stream with the trend anticipated over the next five (5) years and discuss how this new total will be handled. Include in this discussion how problem wastes like waste tires, used oil, latex paint, electronics and other problem wastes are currently handled and are projected to be handled during the next five (5) years. What other waste types generated in this region require special attention? Discuss disposal options and management of these waste streams as well as how these waste streams will be handled in the future. Include in this discussion how commercial and industrial wastes are managed. Also provide an analysis noting source and amounts of such wastes entering or leaving the region, noting the source and amounts of such wastes.

Current MSW Stream

In the most recent Carroll County Solid Waste Annual Progress Report (2012), the total MSW stream was reported as 26,122 tons. This amount consisted of 17,096 tons being disposed in Class I landfills, 3,689 tons being recycled, and 5,337 being diverted by other means.

Carroll County's Class I disposal numbers have been consistent since the 1995 base year with the exception of the year 2001.

A large portion of the MSW stream is due to the residents of Carroll County. It is estimated that the citizens make up 47% of the MSW stream. The remaining MSW stream is estimated to be 29% commercial, 10% institutional, and 14% industrial.

TABLE 3.1 Regional Solid Waste Stream Disposal for 2012 – 2018

Class I Disposal Site	Reported Year (APR 2012)	Projected Year					
	2012	2013	2014	2015	2016	2017	2018
MSW disposed in NW TN Disposal Corp. Class I Landfill located in Obion County	10,009	9,950	9,900	9,850	9,800	9,750	9,700
MSW disposed in West Camden Class I Landfill located in Benton County	6,045	6,025	6,000	5,975	5,950	5,925	5,900
MSW disposed in Madison County Class I Landfill located in Madison County	1,042	1,030	1,020	1,010	1,000	990	980
Total Regional Waste Disposal	17,096	17,005	16,920	16,835	16,750	16,665	16,580

The five-year projections for waste disposal in Carroll County are provided in the table above. These estimates are based on a slight annual decrease to coincide with the population decreases that were projected in Section 1 of this assessment.

Carroll County will continue to offer recycling at the Recycle Center. Approximately 680 tons of recyclables were collected at the Carroll County Recycle Center in 2012.

This figure includes more than 450 tons of cardboard and 120 tons of different types of paper. There are also several other private recycling facilities in the county that takes recyclables. More than 2,700 tons of recyclables were reported by these facilities in 2012. Over 2,600 tons of diversion was reported by industrial and commercial venues.

Regional Solid Waste Management

The table on the next page describes how the region's total waste stream is managed currently and how it will be managed in the next 5 years. Carroll County and its municipalities and the businesses are all listed separately.

TABLE 3.2 Waste Stream Management

Jurisdiction or Sector	Solid Waste Stream Collection	Solid Waste Disposal Options	Present Problem Waste Handling	Future Problem Waste Handling	Other Problem Waste Types
Carroll County & Clarksburg	County Convenience Center Available to all residents of the County Residential solid waste Mandatory door-to-door waste pickup Local businesses Not permitted to use the convenience center	Northwest TN Disposal Corp., Inc. Class I Landfill located in Obion County as primary waste disposal facility for unincorporated residents of Carroll County and local businesses	Waste tires: Residential Tires Only Used oil: Recycle Center Automobile fluids: Recycle Center Latex paint: HHW Event Electronics: Recycle Center	Waste tires: Residential Tires Only Used oil: Recycle Center Used oil filters: Recycle Center Automobile fluids: Recycle Center Latex paint: HHW Event Electronics: Recycle Center	HHW collected at mobile collection events. Due to limited statewide mobile collection site scheduling, no regional approach has been developed to handle HHW. A regional approach to handle HHW could be evaluated by the Northwest Development District. Planned program discussions can be scheduled in the near future.
Atwood	Solid waste curbside collection fee service for city residents.	Northwest TN Disposal Corp., Inc. Class I Landfill located in Obion County as primary waste disposal facility for residents of Atwood and local businesses	Provided by Carroll County	Provided by Carroll County	Provided by Carroll County
Bruceston	Solid waste curbside collection fee service for city residents.	West Camden Class I Landfill located in Benton County as primary waste disposal facility for residents of Bruceston and local businesses	Provided by Carroll County	Provided by Carroll County	Provided by Carroll County
Hollow Rock	Solid waste curbside collection fee service for city residents.	Northwest TN Disposal Corp., Inc. Class I Landfill located in Obion County as primary waste disposal facility for residents of Hollow Rock and local businesses	Provided by Carroll County	Provided by Carroll County	Provided by Carroll County
Huntingdon	Solid waste curbside collection fee service for city residents.	West Camden Class I Landfill located in Camden as primary waste disposal facility for residents of Huntingdon and local businesses	Provided by Carroll County	Provided by Carroll County	Provided by Carroll County
McKenzie	Solid waste curbside collection fee service for city residents.	Northwest TN Disposal Corp., Inc. Class I Landfill located in Obion County as primary waste disposal facility for residents of McKenzie and local businesses	Provided by Carroll County	Provided by Carroll County	Provided by Carroll County
McLemoresville	Solid waste curbside collection fee service for city residents.	Northwest TN Disposal Corp., Inc. Class I Landfill located in Obion County as primary waste disposal facility for residents of McLemoresville and local businesses	Provided by Carroll County	Provided by Carroll County	Provided by Carroll County
Trezevant	Solid waste curbside collection fee service for city residents.	Northwest TN Disposal Corp., Inc. Class I Landfill located in Obion County as primary waste disposal facility for residents of Trezevant and local businesses	Provided by Carroll County	Provided by Carroll County	Provided by Carroll County
Business	Subscription service provided by: Contracts with private haulers, and Direct haul by business.	Northwest TN Disposal Corp., Inc. Class I Landfill located in Obion County as primary waste disposal facility for residents of Carroll County and local businesses	Available service provided by: In-house business programs and Contractors	Available service provided by: In-house business programs and Contractors	Hazardous waste generated from commercial and industrial businesses is regulated by TDEC, Division of Solid Waste Management, and Hazardous Waste Section.

Wastes Entering or Leaving the County

Barker Brothers, Inc. operates a transfer station just outside the McKenzie city limits on Highway 22. In 2012, the transfer station collected more than 24,000 tons of MSW from a six county area. The table below shows the amount of MSW brought into the transfer station and from which county in Tennessee it originated.

TABLE 3.3 Wastes Entering Carroll County

County	Tonnage
Benton County	52
Carroll County	10,009
Gibson County	2,781
Henderson County	970
Henry County	5,826
Humphreys County	80
Weakley County	4,478
Total	24,196

Source: TDEC Transfer Station Quarterly Reports, March 2013

Carroll County does not operate nor own a Class I landfill. All of the county's MSW is sent out of the county. In 2012, a total of 17,096 tons of MSW was sent to three different Class I landfills. The table below illustrates where the MSW was disbursed.

TABLE 3.4 Wastes Leaving Carroll County

Class I Landfill	County Location	Tonnage
Northwest TN Disposal Corp.	Obion County	10,009
West Camden Landfill	Benton County	6,045
Madison County Landfill	Madison County	1,042
Total		17,096

Source: TDEC 2012 Solid Waste Origin Report

SECTION 4:

REGIONAL COLLECTION SYSTEMS

Describe in detail the waste collection system in the county and each municipality, including a narrative of the life cycle of solid waste from the moment it becomes waste (loses value) until it ceases to be a waste by becoming a useful product, residual landfill material or an emission to air or water. Label all major steps in this cycle noting all locations where wastes are collected, stored or processed along with the name of operators and transporters for these sites.

County and city government throughout the United States are struggling to develop efficient and cost-effective plans for managing their MSW. Carroll County has an excellent system in place and plans to continue this system into the future.

Carroll County

Carroll County has mandatory door-to-door waste pick up contracted through Barker Brothers. The county contracts with Barker Brothers for waste pickup. Each household pays the county \$18 per month for this service. Although the Carroll County residents are required to pay for this service, the savings are significant with mandatory countywide service. The Carroll County Solid Waste Office sends out bills each month to all of the unincorporated residents of Carroll County and the Town of Clarksburg.

As stated in the previous section, Barker Brothers, Inc. operates a transfer station in Carroll County. The MSW is brought in from five other counties and then transferred to the Class I Landfill. The Carroll County Recycling and Convenience Center is available to all residents of the county. The staff at the center makes runs throughout the county to pick up recyclables, and all residents are encouraged to bring their recyclables to the center. The operating hours of the center are 7 a.m. to 4 p.m. Monday through Friday. There are also several other private recyclers that operate within Carroll County.

Municipalities

There are eight municipalities in Carroll County. Seven of the municipalities contract with either Barker Brothers or Waste Management for door-to-door solid waste collection for their residents. Carroll County Solid Waste bills the Town of Clarksburg's residents. The fees each municipality charges vary from a low of \$8 per month to a high of \$18 per month. There are no public recycling options offered by any of the municipalities.

The table below illustrates all locations where wastes are collected and stored along with the name of operators and transporters for these sites.

TABLE 4.1 Regional Collection Systems

Jurisdiction	Transporter	Class I Landfill
Carroll County	Barker Brothers, Inc.	Northwest TN Disposal Corp.
Atwood	Barker Brothers, Inc.	Northwest TN Disposal Corp.
Bruceston	Waste Management, Inc.	West Camden Landfill
Hollow Rock	Barker Brothers, Inc.	Northwest TN Disposal Corp.
Huntingdon	Waste Management, Inc.	West Camden Landfill
McKenzie	Barker Brothers, Inc.	Northwest TN Disposal Corp.
McLemoresville	Barker Brothers, Inc.	Northwest TN Disposal Corp.
Trezevant	Barker Brothers, Inc.	Northwest TN Disposal Corp.

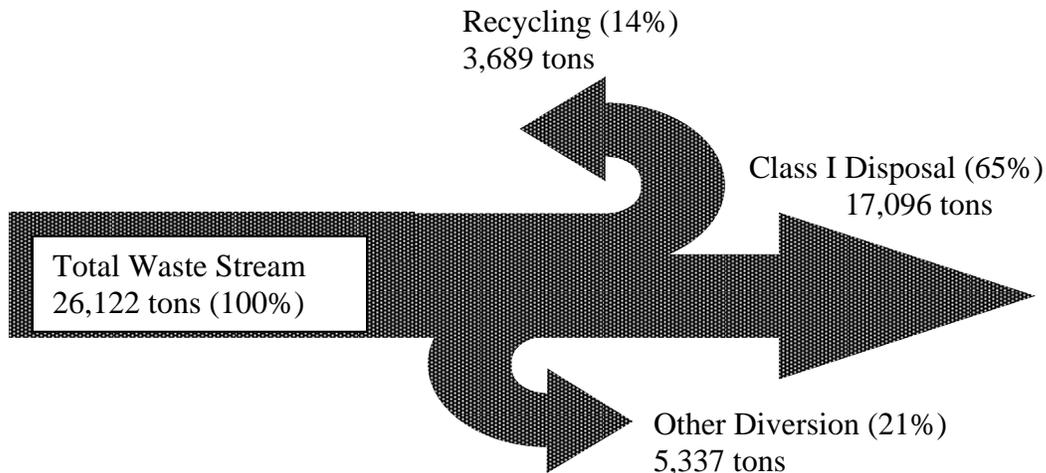
Carroll County recycles many different commodities. The table below shows these commodities and what processors are utilized.

TABLE 4.2 Carroll County Commodities and Processors

Commodities	Processor	Location
Cardboard	Hood Container Corp.	New Johnsonville, TN
Newspaper	Cel Pak	Decatur, AL
Mixed Office Paper	Kimberly Clark	Loudon, TN
Mixed Metals	Dale's Recycling	Milan, TN
Tires	Mac Tires	Nashville, TN
Auto Batteries	Mathis Battery	Dresden, TN
E-Waste	Creative Recycling	Nashville, TN

Flow Diagram of Carroll County Total Annual Regional Waste Stream

The figures shown in the flow diagram below were taken from the 2012 Carroll County Solid Waste Annual Progress Report.



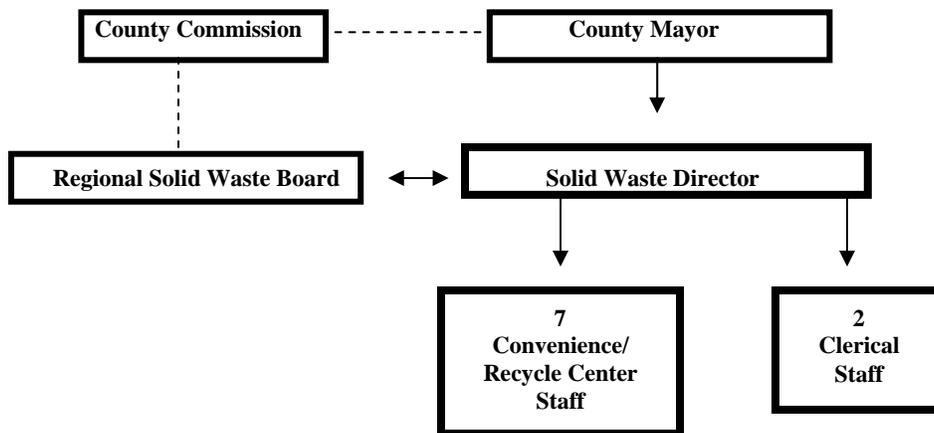
SECTION 5:

SOLID WASTE MANAGEMENT INFRASTRUCTURE

Provide organizational charts of each county and municipality's solid waste program and staff arrangement. Identify needed positions, facilities, and equipment that a fully integrated solid waste system would have to provide at a full level of service. Provide a scale county level map indicating location of all facilities including convenience centers, transfer stations, recycling centers, waste tire drop-off sites, used oil collection sites, paint recycling centers, all landfills, etc. Identify all current revenue sources by county and municipality that are used for materials and solid waste management. Identify any short comings in service and note what might be needed to fill this need.

Carroll County

An organizational chart is provided below for operations of the Carroll County Solid Waste Department.



Future Solid Waste Infrastructure Development Needs

The Carroll County Recycle Center needs extensive repair work completed to make the center more efficient and safer. The roof is leaking in numerous places and needs to be replaced. The driveway is full of potholes and needs to be repaired.

In or around five years, a warehouse will need to be constructed in order to store increased volumes of paper, e-waste, etc. This need is current but the funding is not available at this time.

Current equipment is 8 – 9 years old and is showing wear and tear. More equipment will be needed in the near future. The county will utilize grants for this equipment.

The table listed below provides a list of the future needs for Carroll County to continue to operate an integrated solid waste management program. The costs listed below are estimates only and should be considered a baseline for future planning.

TABLE 5.1 Future Solid Waste Needs

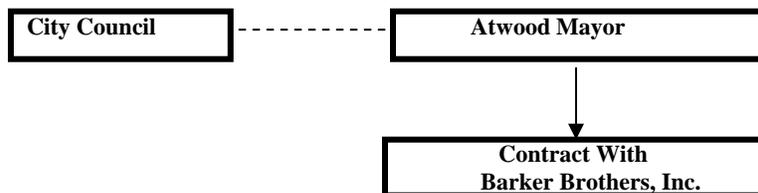
Need	Estimated Cost	Potential Revenue Source
Recycling Collection Truck	\$ 27,000	Grants
4 Collection Trailers	\$ 16,000	Grants
Shredder	\$ 40,000	Grants
Skid Steer Loader	\$ 25,000	Grants
Forklift	\$ 22,000	Grants
20 Collection Boxes	\$ 6,800	Grants
6 Collection Tubs	\$ 4,500	Grants
60 x 60 Warehouse	\$180,000	Grants
Used Oil Heater	\$ 8,500	Grants

Municipalities

All but one of the municipalities contract directly with either Barker Brothers, Inc. or Waste Management for waste disposal. Carroll County bills the Town of Clarksburg’s residents directly for waste collection. Since none of the municipalities in Carroll County is required by Tennessee statute to provide a fully integrated solid waste system, no recycling efforts are conducted by any of the municipalities.

Atwood

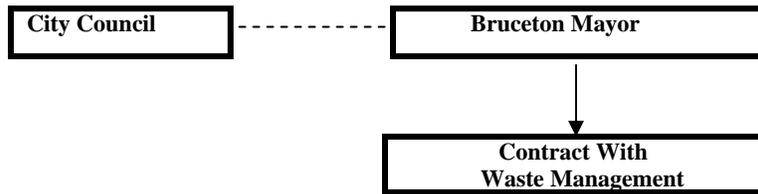
The Town of Atwood provides residential curbside collection and commercial subscription service for approximately 930 customers. The city does not provide recycling collection services. An organizational chart for the Town of Atwood is provided below.



No positions are funded out of the Atwood Solid Waste Budget. The city contracts directly with Barker Brothers, Inc. for waste disposal. Atwood residents pay \$8 per month for collection service and the commercial rates vary.

Bruceton

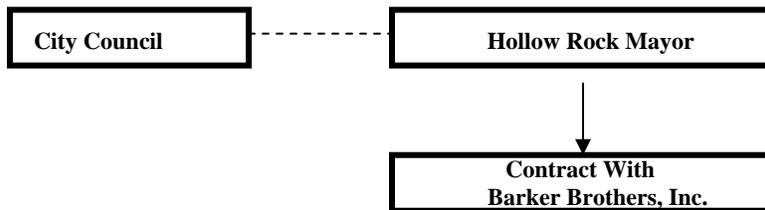
The Town of Bruceton provides residential curbside collection and commercial subscription service for approximately 1,460 customers. The city does not provide recycling collection services but does divert limbs, leaves, and construction debris away from the Class I landfill. An organizational chart for the Town of Bruceton is provided below.



No positions are funded out of the Bruceton Solid Waste Budget. The city contracts directly with Waste Management for waste disposal. Bruceton residents pay \$18 per month for collection service and the commercial rates vary.

Hollow Rock

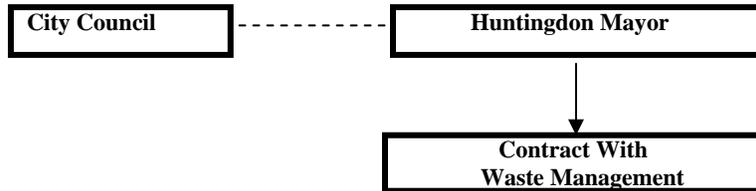
The Town of Hollow Rock provides residential curbside collection and commercial subscription service for approximately 710 customers. The city does not provide recycling collection services. An organization chart for the Town of Hollow Rock Sanitation Department is provided below.



The Town of Hollow Rock funds no positions out of the Solid Waste Budget. Hollow Rock residents pay \$12.50 per month for collection service and the commercial rates vary.

Huntingdon

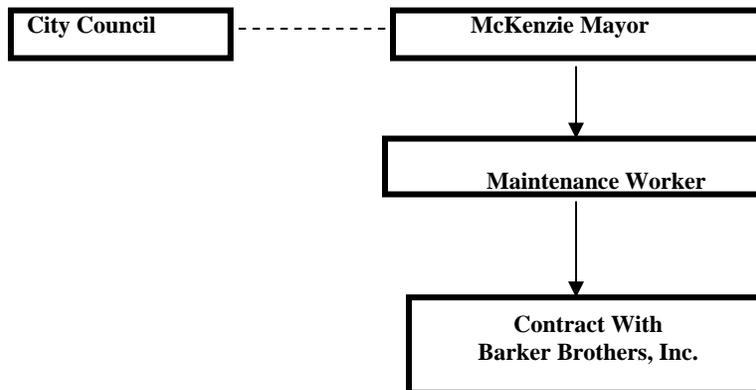
The Town of Huntingdon provides residential curbside collection and commercial subscription service for approximately 3,940 customers. The city does not provide recycling collection services but does divert limbs, leaves, and construction debris away from the Class I landfill. An organizational chart for the Town of Huntingdon is provided below.



No positions are funded out of the Huntingdon Solid Waste Budget. The city contracts directly with Waste Management for waste disposal. Huntingdon residents pay \$15 per month for collection service and the commercial rates vary.

McKenzie

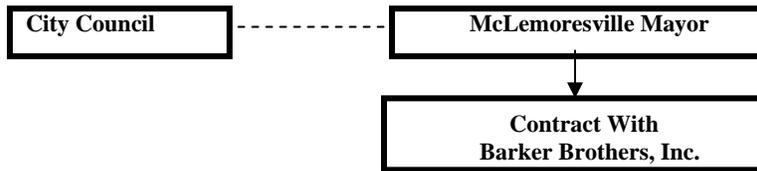
The City of McKenzie provides residential curbside collection and commercial subscription service for approximately 5,200 customers. The city does not provide recycling collection services but does divert limbs, leaves, and construction debris away from the Class I landfill. An organizational chart for the City of McKenzie is provided below.



One Solid Waste position is funded out of the McKenzie Solid Waste Budget. The city contracts directly with Barker Brothers, Inc. for waste disposal. McKenzie residents pay \$14 per month for collection service and the commercial rates vary.

McLemoresville

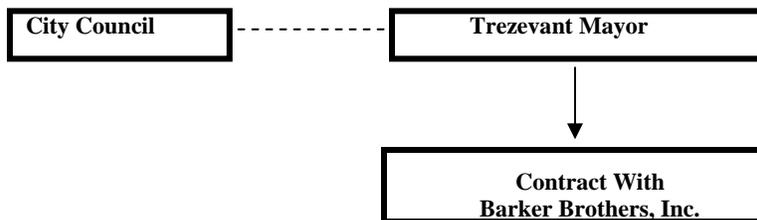
The Town of McLemoresville provides residential curbside collection and commercial subscription service for approximately 350 customers. The city does not provide recycling collection services. An organizational chart for McLemoresville is provided below.



No positions are funded out of the McLemoresville Solid Waste Budget. The city contracts directly with Barker Brothers, Inc. for waste disposal. McLemoresville residents pay \$14 per month for collection service and the commercial rates vary.

Trezevant

The Town of Trezevant provides residential curbside collection and commercial subscription service for approximately 850 customers. The city does not provide recycling collection services. An organizational chart for the Town of Trezevant is provided below.

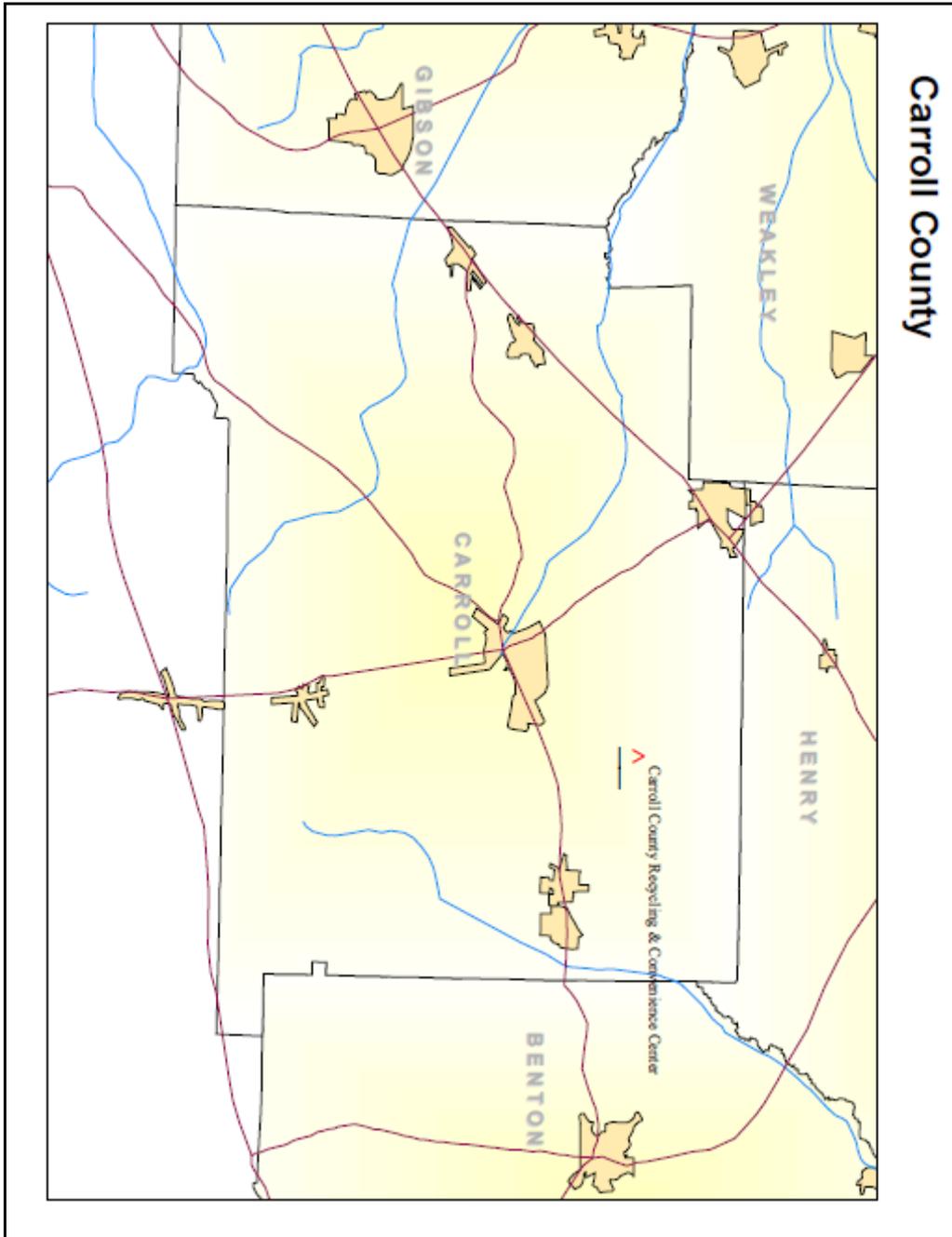


The city contracts directly with Barker Brothers, Inc. for waste disposal. Trezevant residents pay \$14 per month for collection service and the commercial rates vary.

Locations of Solid Waste Facilities

A Carroll County map is provided on the following page with the locations all solid waste facilities in the county.

Carroll County Solid Waste Facilities



SECTION 6:

PUBLIC PARTICIPATION

Describe current attitudes of the region and its citizens towards recycling, waste diversion, and waste disposal in general. Where recycling is provided, discuss participation within the region. Indicate current and ongoing education measures to curb apathy or negative attitude towards waste reduction. Are additional measures needed to change citizen's behaviors? If so, what specific behaviors need to be targeted and by what means?

Current Attitudes Concerning Recycling, Waste Diversion, and Waste Disposal

Trends are continuing to improve through education on solid waste, recycling, and environmental issues. Industries are finding recycling a viable tool to reduce expenditures while meeting State and Federal environmental mandates. The Carroll County Solid Waste Director has been instrumental in keeping the public apprised on current issues.

The Recycling Center has seen an increase in recycling every year it has been open. Tours are conducted at the Recycling Center throughout the year to promote the program. Many student groups and civic organizations partake of these tours.

Education Measures

Four schools in Carroll County offer educational programs regarding the effects and benefits of recycling and waste reduction. The Solid Waste Director has been instrumental in setting these programs up. The Solid Waste Director also utilizes the Litter Grant to fund county outreach projects. The table below illustrates the programs that were conducted in 2008.

TABLE 6.1 Public Education and Information Activities

Program Name	Sponsor	Effectiveness	Program Type	Target Group	# Served
Educational Programs	Carroll County	Positive	Classroom	Children/teachers	Huntingdon Primary School Huntingdon High School West Carroll High School Clarksburg School
Educational awareness for students and the effects and benefits of recycling and waste reduction.					
Litter Grant	Carroll County	Positive	Classroom Advertisements Public Access Tours Community Outreach	Children/Teachers Adult/General Public Business/Industry Governmental Institutional Civic	County Wide
Total county outreach to provide awareness of the effects and benefits by education to prevent littering and illegal dumping					

The Carroll County Solid Waste Director has done an excellent job promoting recycling and waste reduction within the county. Tours are provided at the Recycle Center and presentations are made for various groups and organizations.

SECTION 7:

REGIONAL SOLID WASTE REDUCTION GOAL

The Solid Waste Management Act of 1991 requires all regions to reduce the amount of waste going into Class I landfills by 25%. Amendments to the Act allow for consideration of economic growth, and a “qualitative” method in which the reduction rate is compared on a yearly basis with the amount of Class I disposal. Provide a table showing the reduction rate by each of these goal calculation methodologies. Discuss how the region made the goal by each methodology or why they did not. If the region did not meet the 25% waste reduction goal, what steps or infrastructure improvements should be taken to attain the goal and to sustain this goal into the future.

TABLE 7.1 Measurement of Regional Waste Reduction Goal

County	Waste Reduction Goal Calculation Method			
	Compared to Base Year	Population Ratio	Economic-Population Ratio	Qualitative - Real Time
Carroll County	44%	44%	36%	35%
25% Waste Reduction Goal Achieved	Yes	Yes	Yes	Yes

Source: TDEC, Division of Solid Waste Management, Division of Solid Waste Assistance Program.

Variables Affecting Regional Waste Reduction Efforts

Carroll County has met all of the above waste reduction goal calculation methods. The main reason the county has met all of the above methods is because the county has had a Solid Waste Director to oversee the program from the very start. The Solid Waste Director has implemented a well-organized solid waste program for many years. He has utilized many solid waste grants to build a successful program and has worked hand-in-hand with local and state departments to benefit Carroll County.

Future Regional Waste Reduction Program

No major changes need to be made to this successful program. The Recycle Center needs to have repair work completed to make it safer and more energy efficient. The roof is leaking in several places and is in dire need of being totally replaced. The driveway is full of potholes and also needs repair work.

A warehouse will need to be built in or around five years. This warehouse is needed to store increased volumes of paper created by the horizontal baler. This need is current but funding is not available at the current time.

The current equipment is showing wear and tear and will need to be replaced in the near future. Carroll County will apply for solid waste grants as they become available.

SECTION 8:**SOLID WASTE DISPOSAL CAPACITY**

Provide a chart indicating current collection and disposal capacity by facility site and the maximum capacity the current infrastructure can handle at maximum through put. Provide this for both Class I and Class III/IV disposal and recycled materials. Identify and discuss any potential shortfalls in materials management capacity whether these are at the collection or processor level.

TABLE 8.1 10-Year Regional Disposal Assurance in Carroll County

Site Name(s)	Annual Tons Disposed by Carroll County*	Solid Waste Permit #	Current Disposal (daily throughput)	Maximum Disposal Capacity (daily throughput)	Projected Life of Facility
West Camden Sanitary Landfill located in Benton County	6,045	SNL 03-0247	2,300 tons per day	5,000 tons per day	25+ years remaining life
Madison County Landfill located in Madison County	1,042	SNL 57-0239	2,000 tons per day	4,000 tons per day	25+ years remaining life
NW Tennessee Disposal Corporation located in Obion Co.	10,009	SNL 66-0143	2,200 tons per day	5,000 tons per day	25+ years remaining life

Source: West Camden Landfill, Madison Co. Landfill, NW Tennessee Disposal Corp., November 2013

*Note: Annual tonnage disposed includes Municipalities and Businesses

No potential shortfalls in materials management capacity at the collection or processor level are foreseen. Carroll County does not utilize any Class III/IV landfills.

Provide a chart or other graphical representation showing public and private collection service provider area coverage within the county and municipalities. Include provider's name, area of service, frequency of collection, yearly tons collected, and the type of service provided.

TABLE 8.2 Public and Private Collection Service in Carroll County in 2012

Service Provider	Service Area*	Frequency of Service (Weekly, Bi-weekly, on call, etc.)	Estimated Average Annual Tons Collected*	Type Service (Curbside, Convenience Center, Green Box)
Carroll County Unincorporated & Clarksburg	Mandatory County-wide	Weekly	5,616	Residential curbside Local business subscription
Atwood	City residents Local business subscription	Weekly	590	Residential curbside Local business subscription
Bruceston	City residents Local business subscription	Weekly	945	Residential curbside Local business subscription
Clarksburg	City residents Local business subscription	Weekly	180	Residential curbside Local business subscription
Hollow Rock	City residents Local business subscription	Weekly	540	Residential curbside Local business subscription
Huntingdon	City residents Local business subscription	Weekly	5,100	Residential curbside Local business subscription
McKenzie	City residents Local business subscription	Weekly	3,550	Residential curbside Local business subscription
McLemoresville	City residents Local business subscription	Weekly	150	Residential curbside Local business subscription
Trezevant	City residents Local business subscription	Weekly	425	Residential curbside Local business subscription
Total			17,096	

SECTION 9:**UNMET FINANCIAL NEEDS**

Complete the chart below and discuss unmet financial needs to maintain current level of service. Provide a cost summary for current year expenditures and projected increased costs for unmet needs.

TABLE 9.1 Expenditures and Revenues for Carroll County for 2013

EXPENDITURES			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits			
Transportation/hauling			
Collection and Disposal Systems	\$ 1,185,331		\$ 1,185,331
Equipment		\$ 149,800	\$ 149,800
Sites			
Convenience Center			
Transfer Station			
Recycling Center	\$ 496,845		\$ 496,845
MRF			
Landfills			
Site			
Operation			
Closure			
Post Closure Care			
Administration (supplies, communication costs, etc.)			
Education			
Public			
Continuing Ed.			
Capital Projects	\$ 13,338	\$ 180,000	\$ 193,338
REVENUES			
Host agreement fee			
Tipping fees			
Property taxes	\$ 395,537		\$ 395,537
Sales tax			
Surcharges			
Disposal Fees	\$ 300		\$ 300
Collection charges			
Industrial or Commercial charges			
Residential charges	\$ 1,220,417		\$ 1,220,417
Convenience Centers charges			
Transfer Station charges			
Sale of Methane Gas			
Other sources: (Grants, bonds, interest, sales, etc.)	\$ 157,993	\$ 78,733	\$ 236,726

Carroll County has three separate budgets for its solid waste programs: Waste Pickup, Recycling Center, and Litter Grant. The Solid Waste Director is in charge of all three programs. During the past few years, the market for recyclable materials dramatically dropped. Thus, the revenue was much less at the Recycle Center. In the upcoming fiscal year, residents will be charged \$18 per month for weekly collection service. The county has a contract with Barker Brothers, Inc. for waste disposal.

TABLE 9.2 Expenditures and Revenues for the Town of Atwood for 2013

Expenditures	
Description	Amount
Waste Disposal	\$60,000
Total Expenditures	\$60,000
Revenues	
Collection Charges	\$55,000
Total Revenues	\$55,000

Atwood provides residential curbside collection and commercial subscription service for approximately 930 residents. The Town of Atwood charges the citizens \$8 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal.

TABLE 9.3 Expenditures and Revenues for the Town of Bruceton for 2013

Expenditures	
Description	Amount
Waste Disposal	\$ 135,000
Total Expenditures	\$ 135,000
Revenues	
Collection Charges	\$ 145,250
Total Revenues	\$ 145,250

The Town of Bruceton provides residential curbside collection and commercial subscription service for approximately 1,460 residents. Bruceton charges the citizens \$18 per month for weekly waste collection and contracts with Waste Management for waste disposal.

TABLE 9.4 Expenditures and Revenues for the Town of Hollow Rock for 2013

Expenditures	
Description	Amount
Tippage Fee	\$ 55,000
Clean Up Week	1,000
Postage	350
Accounting & Auditing	500
Total Expenditures	\$ 56,850
Revenues	
Collection Charges	\$ 59,475
Total Revenues	\$ 59,475

Hollow Rock provides residential curbside collection and commercial subscription service for approximately 710 residents. The Town of Hollow Rock charges the citizens \$12.50 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal.

TABLE 9.5 Expenditures and Revenues for the Town of Huntingdon for 2013

Expenditures	
Description	Amount
Waste Disposal	\$ 181,000
Administrative Services	89,000
Total Expenditures	\$ 270,000
Revenues	
Collection Charges	\$ 270,000
Total Revenues	\$ 270,000

The Town of Huntingdon provides residential curbside collection and commercial subscription service for approximately 3,940 residents. Huntingdon charges the residents \$15 per month for weekly waste collection and contracts with Waste Management for waste disposal.

TABLE 9.6 Expenditures and Revenues for the City of McKenzie for 2013

Expenditures	
Description	Amount
Sanitation Department	\$ 350,000
Landfill Maintenance	13,500
Total Expenditures	\$ 363,500
Revenues	
Collection Charges	\$ 390,000
Total Revenues	\$ 390,000

McKenzie provides residential curbside collection and commercial subscription service for approximately 5,200 residents. The City of McKenzie charges the residents \$14 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal.

TABLE 9.7 Expenditures and Revenues for the Town of McMoresville for 2013

Expenditures	
Description	Amount
Solid Waste Disposal	\$ 20,500
Total Expenditures	\$ 20,500
Revenues	
Collection Charges	\$ 20,500
Total Revenues	\$ 20,500

The Town of McMoresville provides residential curbside collection and commercial subscription service for approximately 350 residents. McMoresville charges the residents \$14 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal.

TABLE 9.8 Expenditures and Revenues for the Town of Trezevant for 2013

Expenditures	
Description	Amount
Solid Waste Disposal	\$ 64,000
Insurance	3,900
Total Expenditures	\$ 67,900
Revenues	
Collection Charges	\$ 67,000
Total Revenues	\$ 67,000

Trezevant provides residential curbside collection and commercial subscription service for approximately 850 residents. The Town of Trezevant charges the residents \$14 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal.

SECTION 10:

CURRENT REVENUE SOURCES

Identify all current revenue sources by county and municipality that are used for materials and solid waste management. Project future revenue needs from these categories and discuss how this need will be met in the future. Use Chart 9 as an example to present data.

Carroll County

The current Carroll County Solid Waste/Sanitation Fund has several sources of revenue. These sources are: County Property Taxes, Residential Waste Collection Charges, Solid Waste Disposal Fee, Sale of Recycled Materials, and the Litter Program Grant.

In FY2008, the county took out a \$60,000 loan through the Government Loan Pool. A portion of these funds was used to purchase a much-needed horizontal baler.

The 2012 Carroll County property tax rate ranges from a low of \$3.09 to a high of \$4.96 depending on where you live in the county. The property tax rate is based on which Special School District the resident is located. The local option sales tax is at the maximum rate of 2.75%.

Due to the current recession, unemployment rates are expected to increase and local option sales tax to decrease. Monies are very tight within the county at the present time.

The only revenue sources for the county to utilize in these hard economic times are grants for solid waste management and/or waste diversion. Hopefully, if these grants are offered, Carroll County will continue to be able to fund a fully integrated solid waste program.

Atwood

Atwood provides residential curbside collection and commercial subscription service for approximately 930 residents. The Town of Atwood charges the citizens \$8 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal. The only revenue sources are the fees the city collects from the residents.

Bruceton

The Town of Bruceton provides residential curbside collection and commercial subscription service for approximately 1,460 residents. Bruceton charges the citizens \$18 per month for weekly waste collection and contracts with Waste Management for waste disposal. The only revenue sources are the fees the city collects from the residents.

Hollow Rock

Hollow Rock provides residential curbside collection and commercial subscription service for approximately 710 residents. The Town of Hollow Rock charges the citizens \$12.50 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal. The only revenue sources are the fees the city collects from the residents.

Huntingdon

The Town of Huntingdon provides residential curbside collection and commercial subscription service for approximately 3,940 residents. Huntingdon charges the residents \$15 per month for weekly waste collection and contracts with Waste Management for waste disposal. The only revenue sources are the fees the city collects from the residents.

McKenzie

McKenzie provides residential curbside collection and commercial subscription service for approximately 5,200 residents. The City of McKenzie charges the residents \$14 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal. The only revenue sources are the fees the city collects from the residents.

McLemoresville

The Town of McLemoresville provides residential curbside collection and commercial subscription service for approximately 350 residents. McLemoresville charges the residents \$14 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal. The only revenue sources are the fees the city collects from the residents.

Trezevant

Trezevant provides residential curbside collection and commercial subscription service for approximately 850 residents. The Town of Trezevant charges the residents \$14 per month for weekly waste collection and contracts with Barker Brothers, Inc. for waste disposal. The only revenue sources are the fees the city collects from the residents.

FUTURE REVENUE NEEDS

The Carroll County Recycling Center hopes to continue to derive a portion of its budget from county property taxes. No additional funds from the county budget are expected to be allocated for solid waste or recycling purposes due to the dire economic conditions of the county. Hopefully, more funds will be generated from the sale of recyclable materials once the market improves. Solid waste grants will be necessary for the future success of the program.

The municipalities will continue to adjust their collection fees in proportion to the increases of the private hauler fees.

SECTION 11:

REGIONAL SOLID WASTE PLAN

Discuss this region’s plan for managing its solid waste management system during the next five (5) years. Identify any deficiencies and suggest recommendations to eliminate deficiencies and provide sustainability of the system for the next five (5) years. Show how the region’s plan supports the Statewide Solid Waste Management Plan.

The table below summarizes Carroll County’s existing programs, future programs, and the Tennessee Solid Waste Management Plan.

TABLE 11.1 Regional Solid Waste Management Plan

Solid Waste Program	Existing Solid Waste Programs	Future Solid Waste Programs	Tennessee Mandated Plan
Residential Solid Waste Collection	Carroll County has mandatory door-to-door collection service	Continue mandatory door-to-door collection service	County to provide CCC’s for residents according to population or service area, maintain required design and operational standards.
Recycling	Carroll County has a Recycle Center to receive recyclables from residents and provide pickup from companies. Private recycling companies are also available.	Continue to provide current recycling services.	County to provide at least one (1) drop-off site for collection of residential recyclable materials.
Waste Reduction	Carroll County met reduction goal by every calculation	Continue to meet the 25% Waste Reduction Goal.	Region to achieve 25% Waste Reduction Goal.
Problem Waste Management	Carroll County collects electronics, residential waste tires, automobile fluids, and batteries at the Recycle Center. Carroll County hosts a HHW collection event to collect paint.	Continue to collect electronics, residential waste tires, automobile fluids, and batteries at the Recycle Center. Continue to host a HHW collection event to collect paint.	County to provide at least one (1) site to accept automobile fluids, batteries, and waste tires.
Public Education and Information	Carroll County provides educational activities to the schools through the Litter Grant.	Continue to provide educational activities to the schools through the Litter Grant.	Region to develop and implement solid waste management action plan for adults and children.
Disposal	Carroll County contracts with Barker Brothers, Inc. to provide disposal services.	Continue to contract disposal services with a private waste hauler.	Region to assure 10-year disposal capacity.
Planning	The Carroll County Solid Waste Board meets as needed throughout the year to discuss solid waste issues. All reporting requirements are up to date.	Continue meetings throughout the year to discuss solid waste issues. Keep reporting requirements up to date.	Region to provide Annual Progress Reports, Needs Assessments, and other reporting requirements as needed.

Sustainability of the Solid Waste Plan must include, at the minimum:

- Continue Carroll County Solid Waste Board involvement,
- Continue the activities of the Solid Waste Director,
- Continue the activities at the Recycle Center,
- Continue to pursue all grant funds for equipment and facilities,
- Continue to utilize technical assistance providers,
- Continue to research technologies and other program options,
- Continue to promote waste reduction efforts, and
- Continue public outreach and educational programs

This list is neither inclusive nor listed in priority. Expansion and sustainability will depend on the economy and funding sources.

SOURCES

U. S Census Bureau
Tennessee Department of Labor and Workforce Development
U. S. Bureau of Economic Analysis
Tennessee Department of Revenue
2012 Carroll County Annual Progress Report
Jeff Heyduck, Carroll County Solid Waste Director
Carroll County Budget Document
Atwood Budget Document
Bruceton Budget Document
Hollow Rock Budget Document
Huntingdon Budget Document
McKenzie Budget Document
McLemoresville Budget Document
Trezevant Budget Document