

Smith County, Tennessee Solid Waste Planning Region



Solid Waste Needs Assessment

**Prepared by:
The Upper Cumberland County Development District
June 2012**

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
401 Church Street, 8th Floor
Nashville, TN 37243-1533

INTRODUCTION

The Solid Waste Management Act of 1991 requires that local governments comprehensively plan to manage their solid waste through modern, integrated, efficient systems. In order to assure that such planning is carried out on the solid waste foundation of relevant and objective knowledge of local conditions, the Act requires that staff of the Development District coordinate, conduct and maintain a Needs Assessment of each municipal solid waste planning region. This assessment shall be revised every five years [T.C.A. 68-211-811].

The categories of information required are:

- Demographic information and projections;
- An analysis of economic activity within the Region;
- Characterization of the waste stream;
- Projection of solid waste generation;
- Evaluation of the collection systems for every municipality & county with the region;
- Evaluation of existing, new or expanded solid waste capacity and management facilities within the region;
- A statement of goals that are consistent with the state plan;
- An analysis of existing or potential waste flows within the region and between adjacent regions;
- A comparison of projected demands from waste generation & importation of waste with available and projected capacity and an identification of potential shortfalls in capacity; a
- Any additional information as the commissioner may require.

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 (5) years.

SECTION 1:**DEMOGRAPHIC INFORMATION AND PROJECTION**

Provide a table and chart showing the region's population for 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. Discuss projected trends and how it will affect solid waste infrastructure needs over the next five (5) years.

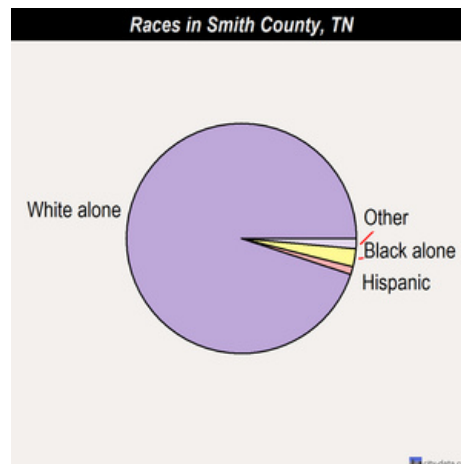
Smith County, Demographics, Statistics and General Information:

According to the 2010 U.S. Census Bureau, the population of Smith County is about 19,166. The land area in Smith County is approximately 314.29 square miles, 10.9 square miles of water area, and 61 persons per square mile.



In January of 2011 the cost of living index in Smith County was 83.0, which is less than the U.S. average of 100. Industries providing employment in Smith County include: Manufacturing (26.8%), Educational, health, and social services (14.4%), Construction (10.5%), and Retail trade (10.2%). The type of workers include: Private wage or salary: 77%, Government: 11%, Self-employed, not incorporated: 11%, and Unpaid family work: 0%.

Races in Smith County, Tennessee include: White Non-Hispanic Alone (93.6%), Hispanic or Latino (2.0%), Black Non-Hispanic alone (2.3%), and Two or more races (1.3%). The median resident age is: 36.8 years with approximately 8,720 males (49.2%), and approximately 8,992 females (50.8%) living in Smith County, Tennessee.



Smith County is located in a very scenic area, and it is located near the northern center of Tennessee in that portion of the State known as the Central Basin. The county embraces an area of 325 miles which is comprised of a varying terrain ranging from flat bottom lands, to undulating, hilly uplands, to precipitous slopes and cliffs. Traversing the county are the Cumberland and Caney Fork Rivers, which attracted the first known settlers to the area including William Walton, the builder of the famed Walton Road across the Cumberland Plateau.

Geographically from a national level, it is located in the Southeast region of the US. Geographically from a state level, it is located in Middle Tennessee area. Situated 50 miles East

of Nashville, Smith County is conveniently located between Nashville, Knoxville, and Chattanooga.

Cordell Hull Lake is located on the Cumberland River in Smith, Jackson, and Clay counties of Tennessee. It is operated and managed by the Nashville District of the US Army Corps of Engineers. The lake is named in honor of one of America’s outstanding statesmen, Cordell Hull, in recognition of his contributions to the people of the United States and the world. The dam is located at river mile 313.5, about 5 miles upstream from Carthage in Smith County. The project is one of the multipurpose projects in the Corps of Engineers’ coordinated plan for development of the water resources of the Cumberland River Basin.

Each year Cordell Hull Lake provides recreational opportunities to millions of visitors. Because of the temperate climate and relatively long recreation season, visitors have many opportunities to fish, hunt, camp, picnic, boat, canoe, hike, ride horseback, and enjoy the outdoors in many other ways. The lake and/or river contain Largemouth Bass, Smallmouth Bass, Crappie, Catfish, White Bass, Striped Bass, (Rockfish), Sauger, Trout, and Bream.

Smith County is proud to be the home of former Vice President, Al Gore, and at one time was the home of former US Secretary of State, Cordell Hull, who practiced law here as a young man. The county is also known for its Second Empire-style Courthouse, built in 1879, its many antique shops, and its many beautiful historic homes.

According to the US Census Bureau, Smith County’s population growth has shown a slight increase from 17,712 in 2000 to 19,166 in 2010. Rural residents make up 79% of the population, while the other 21% are urban. Another key population variable that impacts solid waste generation is age distribution.

Most every projection that has been done for the county shows that the percentage of population from the age 18 or younger will decline, while the percentage of the population age 65 or older will increase during the planning period. This is a significant trend since older citizens are likely to produce less waste than the younger age groups, and the types of waste generated may also change as well.

TABLE 1.1 Smith County Historic and Projected Population Trends (2000 thru 2016)

Year	Total	Carthage	Gordonsville	South Carthage	Unincorporated
2000	17,791	2,254	1,072	1,304	13,161
2001	17,962	2,252	1,101	1,306	13,303
2002	18,104	2,250	1,130	1,307	13,417
2003	18,236	2,248	1,159	1,309	13,520
2004	18,302	2,247	1,188	1,311	13,556
2005	18,521	2,246	1,217	1,312	13,746
2006	18,726	2,245	1,246	1,314	13,921
2007	18,905	2,244	1,275	1,315	14,071
2008	19,179	2,243	1,304	1,317	14,315
2009	19,219	2,242	1,333	1,319	14,325

2010	19,166	2,240	1,365	1,320	14,241
2011	19,150	2,242	1,394	1,322	14,192
2012	19,351	2,244	1,423	1,324	14,360
2013	19,552	2,246	1,452	1,326	14,528
2014	19,753	2,248	1,481	1,328	14,696
2015	19,956	2,250	1,510	1,330	14,866
2016	20,114	2,252	1,539	1,332	14,991

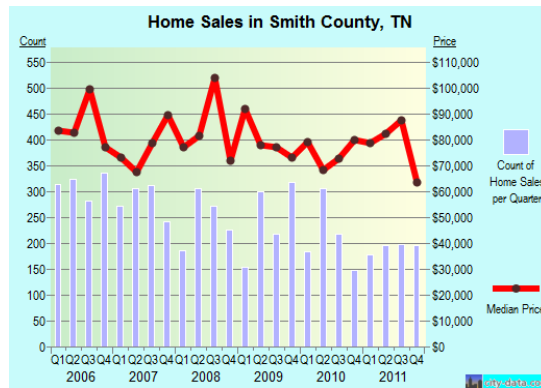
Sources: Historic data are from the U.S. Census Bureau. Projections are based on data from the University of Tennessee CBER. Data compiled by the Upper Cumberland Development District.

Economic Impact of Increasing Retiree Population

Smith County has a relatively low cost of living, low property taxes, and the ideal environment, offering something for everyone.

The average household size for Smith County is 2.5 people. This is slightly higher than the Tennessee average household size of 2 people. The estimated median household income in 2009 for Smith County was \$40,881 which is much less than the Tennessee household income of \$41,725 per year. In 2008 data showed that the percentage of residents living in poverty in Smith County, Tennessee was 12.9% which was below the state average of 17.1%.

The following table indicates home sales in Smith County over the past six years, and how the trend shows a steady decline in home sales since 2008.



Tourism Industry in Smith County

Smith County is within the state of Tennessee in the United States. It is located near the northern center of Tennessee in that portion of the State known as the Central Basin. The county embraces an area of 325 miles which is comprised of a varying terrain ranging from flat bottom lands, to undulating, hilly uplands, to precipitous slopes and cliffs. Traversing the county are the Cumberland and Caney Fork Rivers, which attracted the first known settlers to the area including William Walton, the builder of the famed Walton Road across the Cumberland Plateau.

Geographically from a national level, it is located in the Southeast region of the US. Geographically from a state level, it is located in Middle Tennessee area. Situated 50 miles East

of Nashville, Smith County is conveniently located between Nashville, Knoxville, and Chattanooga.

In-Migration of Retirees and the Impact on Smith County's Public Infrastructure

It is perhaps not surprising that the overwhelming number of immigrants over the past decade and a half have located in a small number of counties. More than three of every four immigrants moved to just one of 10 counties in the state with Smith County showing 1.50 % and 1,671 of total immigration.

According to data from Global Commerce for the past fifteen years every county in the state of Tennessee shows at least one in every twenty-five persons is foreign born.

According to the Commerce of Economic Development report in August of 2011, there is an estimated total population of 19,166 individuals living in Smith County, and 13.6% individuals are over the age of 65.

Economic and social impacts from migration connect to broader age-related issues subject to debate at Federal and State levels. Places that emerge as migration destinations for Americans approaching or entering retirement today will be increasingly influenced by Federal policy decisions regarding Social Security adjustment, pension guarantees, workforce issues, and health care provisions, among others.

SECTION 2:

ECONOMIC ACTIVITY WITHIN THE REGION

Provide a table and chart showing the region's economic profile for all county and 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*

As the data in Item #2 shows, the Smith County economy has been and remains relatively weak in recent years. The county lost a large number of manufacturing jobs, but growth in health and other service sectors has remained strong. Retail sales and bank deposit growth has been sluggish lately and fiscal capacity growth of area governments has been limited.

The median household income for Smith County from 2006-2010 was \$43,200 which is lower than the state average of \$43,314.

Property taxes have been growing in Smith County over the past ten years, with collections of \$21,846 in 2001 and \$37,419 in 2011.

According to the U.S. Department of Labor Bureau of Labor Statistics, the national unemployment rate has declined for nine consecutive months. Tennessee's April unemployment rate is the lowest since November 2008. In April of 2012 Smith County's unemployment rate was 7.6% which is lower than the national unemployment rate of 8.1%.

Item #2

SMITH COUNTY HISTORIC AND PROJECTED ECONOMIC INDICATORS

Year	Labor Force Data				Non-farm Wage and Salary Employment									Per Capita Income (\$'s)	Property Assessment (\$000's)	Taxable Sales (\$000's)	Total Bank Deposits (\$000's)
	Total	Emp	Unemployed		Total	Goods Producing				Service Producing							
			Total	Rate(%)		Total	Total	Mfg	Other	Total	Trade	Health	Gvt				
2000	8,970	8,570	400	4.5	5,435	2,345	1,785	560	3,090	1,070	573	785	662	22,509	204,934	108,660	306,022
2001	8,910	8,470	440	4.9	5,198	2,087	1,550	537	3,021	974	634	733	680	22,881	207,555	106,265	327,717
2002	8,830	8,380	450	5.1	5,232	2,084	1,565	519	3,148	978	702	718	750	22,829	210,282	110,320	342,492
2003	9,170	8,410	760	8.3	5,398	1,921	1,465	456	3,476	962	709	700	1,105	23,152	234,324	116,851	342,305
2004	9,070	8,460	610	6.7	5,408	1,792	1,382	410	3,617	952	724	774	1,167	24,727	231,833	121,347	362,884
2005	9,150	8,600	550	6.0	5,122	1,576	1,310	266	3,547	959	634	842	1,112	25,774	234,132	117,945	366,560
2006	9,280	8,740	540	5.8	4,861	1,473	1,222	251	3,389	919	609	836	1,025	26,650	261,134	123,612	424,634
2007	9,020	8,520	500	5.6	4,954	1,601	1,273	328	3,353	941	574	863	975	28,308	267,950	125,750	425,443
2008	9,270	8,510	760	8.2	5,285	1,882	1,317	565	3,403	992	586	860	965	30,353	275,111	134,921	430,753
2009	9,350	8,090	1,260	13.5	5,180	1,540	1,180	360	3,640	960	610	880	1,190	28,473	277,990	122,000	430,000
2010	9,200	8,240	960	10.4	4,430	1,450	1,050	400	2,980	970	620	890	500	30,204	283,301	132,528	420,246
2011	9,250	8,300	950	10.3	4,490	1,500	1,050	450	2,990	980	630	900	480	31,086	293,078	133,120	417,479
2012	9,300	8,400	900	9.7	4,560	1,550	1,050	500	3,010	990	640	900	480	31,929	304,481	138,984	436,947
2013	9,350	8,500	850	9.1	4,610	1,610	1,060	550	3,000	1,000	650	900	450	32,771	313,098	141,530	442,162
2014	9,400	8,600	800	8.5	4,670	1,660	1,060	600	3,010	1,010	660	900	440	33,614	321,716	144,077	447,377
2015	9,450	8,700	750	7.9	4,750	1,730	1,080	650	3,020	1,020	670	900	430	34,457	330,333	146,624	452,593

Note: Labor force data are based on county of residence. Non-farm wage and salary data are based on county of employment.

Sources: Historic employment data are from the Tennessee Department of Labor and Workforce Development, per capita income data are from the U. S. Bureau of Economic Analysis, retail data are from Tennessee Department of Revenue, and bank deposits are from the FDIC. All projections are by the UCDD staff.

Source: Smith County, Trustees Office.

Smith County Fiscal Budget
 Solid Waste/Sanitation
 Statement of Proposed Operations
 For the fiscal year ending June 30, 2011
 Budgetary
 Account

<u>Revenues</u>		
43107	Residential Waste Charges	6,522.00
43110	Tipping Fees	1,412,980.09
44145	Sale of Recycled Materials	37,920.14
46170	Solid Waste Grants	9,955.20
46430	Public Works Grants-Litter Program	29,237.00
44170	Miscellaneous Refunds	0
	TOTAL OTHER LOCAL REVENUES	\$1,496,614.43
ASSET		
13100	Fixed Assets-Landfill Facilities Development	3,454,392.26
13200	Land	2,017,884.00
13300	Fixed Assets-Buildings and Improvements	122,039.00
13700	Machinery and Equipment	1,254,923.78
	TOTAL ASSETS	6,849,239.04
Liability		
21870	Accrued Liability for Landfill Closure/Post Closure Care Costs-Current	3,016,257.00
	TOTAL LIABILITY	3,016,257.00
<u>EXPENDITURES</u>		
55731	Waste Pickup	116,025.94
55732	Convenience Centers	188,265.13
55739	Other Waste Collection	14,259.30
55754	Landfill Operation and Maintenance	2,004,840.27
	TOTAL EXPENSE	2,323,390.64

SECTION 3:

Elaborate on the region's solid waste stream. Compare the current waste stream with 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 in 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 of any wastes entering or leaving the region, noting the source and amounts of such wastes.

Due to funding limitations, the County does not expect to see a significant change in the collection, sorting, or disposal of waste. The County generates and disposes approximately 8 to 16 tons per day of solid waste. The estimated daily throughput of recyclable materials collected is less than 1 ton per day. Some of the recyclables collected, such as aluminum cans, are stored at the recycling center in Trousdale County until a full load of material has accumulated for marketing.

In 2011 Smith County achieved the 25% waste reduction goal, with an 84% diversion rate.

Solid Waste Program	Existing Regional Solid Waste Programs	Future Regional Waste Programs
Residential Solid Waste Collection	Smith County provides its citizens with (6) Convenience Centers for household garbage drop-off and recycling materials. This County also owns and operates a Class I, and Class III/IV Landfill, accepting solid waste generated from Smith County and outside counties.	The Convenience Center sites have designated containers for loose and processed recyclable materials. Future expansions to the program can be greatly enhanced with potential grant funding opportunities.
Recycling	<p><i>Both residents and businesses are encouraged to utilize the recycling drop-off services available. Business and industry reduction efforts are achieved through actively contacting businesses interested in waste reduction, providing collection and transporting materials to the recycling center for processing and marketing.</i></p> <p><i>The Smith County Solid Waste Department partners with North Central Recycling of Trousdale County in an effort to reduce the amount of materials that enter the Landfill site in Smith County. On average the Smith County Landfill diverts around 2 tons per month of plastic, and more than 6 tons each of newspaper and cardboard. An average of 5 Inmates are assigned to the facility in Trousdale County to help with sorting, cleaning, and baling all recyclables.</i></p>	<p>Smith County Is eager to work with citizens and local organizations to expand their recycling program to a higher level of service. Smith County will continue to focus on its recycling efforts by providing education in the local schools, advertisements in the newspapers and road signs.</p> <p>The Smith County Solid Waste Department plans to continue their partnership for recycling with the North Central Recycling Corporation in the future. Smith County benefits from this partnership by diverting the recyclable items from the landfill site and out of the waste streams.</p>
Waste Reduction	The Smith County solid waste department currently has a 84% diversion rate.	The County Solid waste department will continue to meet and exceed the 25% diversion rate.
Problem Waste Management	The Smith County Solid Waste Department advertises in the local paper to explain where citizens can recycle problem waste. The department charges \$33 per ton for solid waste for out of county residents. There is no tipping fee charge for Smith County residents. Latex is solidified with mulch and the oil based paint is stored. The recycling brochure also lists the sites throughout the county that takes motor oil and batteries and provides other suggestions on how to handle unwanted items.	The county solid waste department does not plan on changing the fee scale for out of county patrons, and they do not anticipate any major changes in the way that items that are collected at the convenience center. However, the department plans on expanding their efforts to encourage businesses to recycle more commodities. The county provides educational events and educational materials for the general public.
Public Education & Information	The key to the success of the public education program is the consistent message for the last 10 years. The utilization of multimedia outlets, outreach, national and state events and written material has	The department plans to continue utilize the newspaper, radio and TV to further the educational process. The department will also continue to participate in State and National events.

	<p>helped to consistently convey the message. The department provided education in April in the school system. This education included information regarding “Earth Day” and how important it is to keep Smith County beautiful by decreasing litter. In addition, education was provided in April for “Ag Day”. The Solid Waste staff provided bracelets, coloring books, pencils, and educational information regarding the need to recycle. Approximately 500 kids received information during these events.</p> <p>The radio ads continue to run at least quarterly. These ads relay the “Keep Tennessee Beautiful” message. Trash cans are located around the Courthouse Square in hopes that individuals will place items in them and avoid littering.</p>	<p>The department will continue to partner with the school system to provide educational events to educate the children about the importance of recycling efforts.</p> <p>The Department plans to continue their partnership with TDOT in October of 2012, in an effort to promote anti-littering, and promote more recycling efforts. The Solid Waste Department will provide litter bags, pencils and other recycling educational materials to children and adults. Staff plans to conduct a Water Color Painting Class for elementary age children 2nd-5th grade.</p>
Disposal	The Smith County Convenience Center’s waste is transported to the Class I and Class III/IV County Landfill.	The county does not have plans to divert from this plan in the next ten years.
Planning	The department is planning on maintaining the existing program, with the expansion of educational efforts to businesses.	At this time, the department is not planning on making any long term changes to the current program.

The Smith County Solid Waste Department has achieved a waste reduction rate of 84% (real time methodology), exceeding the State mandated 25% goal. Smith County needs more funding to purchase equipment. By purchasing a tub grinder, a horizontal baler, a trash compactor, a compactor receiver box, and (10) recycling containers, the County will be able to positively impact the volume reduction of the regional waste stream, and increase potential revenues from the sale of recyclable materials. Additionally, with potential grant funding opportunities, expansion to the existing recycling center would greatly enhance the recycling program to store loose and processed recyclable material.

Smith County will continue to focus on its recycling efforts by providing education in the local schools, and placing advertisements in the newspapers and on road signs. Both residents and businesses are encouraged to utilize the recycling drop-off services available at the Convenience Center sites.

The recycling program in Smith County has been in existence since 1998. The total population to be served by the current recycling is estimated at 19,166 people (2010 Census). The area to be served is Smith County, including the Carthage, South Carthage, Gordonsville and surrounding communities, consisting of 314 square miles.

In addition to the collection and processing of residential and commercial recyclables, Smith County will provide mulching services of brush material. The mulched material is processed at the landfill site, and used to solidify paint.

The Convenience Centers operate an average of 10.5 hours daily. The sites are open Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and a half-day on Sunday. Three of the sites are closed on Wednesdays. The Centers accept cardboard, newsprint, electronics, scrap metal, plastic, paint, and aluminum. Waste tires are collected and loaded into a trailer located at the

Landfill Recycling Center. Liberty Tire Recycling hauls a loaded trailer to a company site in Kentucky for processing. Used oil that is dropped off at the Convenience Center is burned in an on-site heater which heats the convenience center sites in the winter. Contaminated oil is pumped and hauled by Universal Environmental of Murfreesboro, TN.

HHW events are held for citizens who are interested in dropping off items such as: yard chemicals, pills, household chemicals, etc. with the exception of paint, oil, or antifreeze.

Electronic Waste that is delivered to the Convenience Center sites is stored on pallets or in Gaylord boxes. Sam’s Recycling Center of Carthage collects all electronics.

Commercial, Business and Industrial Diversion Efforts:

Private contractors pick up the used oil that is collected for recycling.

The solid waste department diverts wood and yard waste from the landfill, mulches the material at the landfill recycling center and uses it to mix paint and it used to replace rock at the Landfill sites.

In 2011 Smith County reported 84.0% in material tonnage that was diverted from the landfill. Taxable sales in Smith County showed a slight increase from \$399,725,967 in FY 10 to \$401,567,974 in FY 11. This slight increase is probably related to the fact that there are two shopping malls in Lebanon and Mount Juliet Tennessee, which are approximately 30 miles west of Smith County.

Major growth areas were Education and Health Services, which were 2,980 in 2010 compared to 2,100 in 2000. Trade, transportation and utilities also showed a slight increase at 2,830 in 2010 compared to 6,620 in 2000. One area of employment that showed a significant decline in Smith County over the past ten years was manufacturing. Over the past ten years manufacturing jobs have shown a steady decline from 8,430 in 2000 to 5,070 in 2010. This decline is part of a nationwide trend for fewer manufacturing jobs. Some evidence indicates this trend may be reversing slightly, however, it is yet to be reflected in Smith County’s available data.

Retail sales and bank deposit growth have been sluggish lately and fiscal capicity growth of area governmnets has been limited.

General Social and Economic Data

Population		Percent	Personal Income	
Total -2010 Census	19,166	100.0	2010 Census (5 year average)	
White	18,179	94.9	Median Family (2010 \$’s)	\$50,631
Black	410	2.1	Median Household (2010 \$’s)	\$43,200
Other	577	3.0	Per Capita (2010 \$’s)	\$21,026
Hispanic	417	2.2	Individual Poverty Rate (%)	17.7
Age 0-4	1,170	6.1	Family Poverty Rate (%)	14.4
5-17	3,473	18.1		
18-64	11,920	62.2	2009 Bureau of Economic Analysis	
65+	2,603	13.6	Total (000’s)	\$578,408
Median Age	39.9	-----	Per Capita	\$30,204
2011 Estimated Total	19,150	-----		
2000 Census Total	17,712	-----	Miscellaneous	
Land Area (sq. miles)	314.4	-----	2011 Bank Deposits (000’s)	\$417,479
			2009 Businesses with Payroll (000’s)	328
Employment Labor Force	2011 Avg.	04/12	2007 Farm Sales (000’s)	\$14,126
Labor Force-Total	9,390	9,130	2006-2010 Adult (Age 25+) Education	
Employment	8,500	8,520	Percent College Graduates	12.8
Unemployment	880	610	Percent H.S. Graduates	78.3

Rate (%)	9.4	6.7		
Available Labor	970	690	Property Tax Rate -2010	
Work-Force Total	N/A	N/A	Per \$100 Assessment	
Manufacturing	N/A	N/A	Effective	
Non-Manufacturing	N/A	N/A		
2009 Wages	Total	Mfg.	State Sales Tax Rate (%)	
Average Weekly	\$632	\$779	Local Sales Tax Rate (%)	
Retail Sales	2011	2010		
	\$193,568	\$182,460	2011	
Municipal Data	Population		Property Tax Rate	
	-----		-----	
	2010	2000	Nominal	Effective
Carthage	2,306	2,251	\$1.15	\$1.09
South Carthage	1,322	1,302	\$0.89	\$0.84
Gordonville	1,213	1,066	\$0.86	\$0.82

NOTE: Hispanic population may be of any race. Workforce data exclude self-employed and farm workers and are based on place of employment. Wage data include part-time workers. Effective tax sales estimates the rates required to raise similar revenues under current property appraisals.

Source: Upper Cumberland Development District-Senior Analyst 06/04/2012

Plastics- The only plastics that are recycled in Smith County are plastics #1 and #2. This includes plastic beverage containers, and jugs with necks, such as plastic milk containers. To recycle them, the containers must be clean. Oil bottles or bottles containing pesticides, although recyclable plastic, are often taken to the landfill rather than recycled because they contain semi-hazardous waste that the plastic has absorbed which will taint other clean recyclables.

Aluminum Cans-The Smith County Solid Waste Department partners with the Trousdale North Central Region to recycle aluminum cans. Most all of the aluminum can be recycled without waste. By recycling existing aluminum it has been found to be much less toxic to the environment than manufacturing aluminum.

Used Motor Oil and Auto Fluids – These fluids are being collected at the landfill site and are being recycled by a company from Murfreesboro. No difficulties have been encountered.

Gasoline Tanks – These items are not being collected due to the absence of a reliable market. The county is not anticipating a future reliable market for these items.

Tires – Used tires are being collected and recycled. No difficulties have been encountered other than the under-reimbursement rate that is regulated by the State to the local manifested tire management program.

Paint- Surplus paint is being collected and recycled at the Convenience Centers. Additionally, small quantities of latex paint can be dried and put in residential garbage for disposal in the landfill. No difficulties have been encountered.

Household Hazardous Waste-

The mobile Household Hazardous Waste Collection is held for residents of Smith County to dispose of old medicines, yard chemicals, and household chemicals. No paint, oil, or antifreeze is accepted.

E-Waste- E-Waste means electronics that can no longer be used. E-Waste is anything that plugs in and that can be recycled. The Solid Waste Department accepts the electronics and Sam’s Recycling of Carthage, TN. picks them up to restore them.

Batteries- Recycling containers are made available for all kinds of batteries.

Projection of the Solid Waste Stream Analysis over the Next 5 Years

The commercial and industrial sectors play an important role in the source reduction component of Smith County’s waste reduction effort. Notable contributors to this effort are who reduced a total of 45420 tons of solid waste materials in 2011.

Future monitoring costs includes operation costs at the closed Class I and Class III/IV Landfill sites. Landfill gas monitoring is also a reoccurring cost at the Class III/IV landfill.

The Table below summarizes how the region’s total waste stream is managed. Smith County and local businesses are listed separately to describe management methods and programs available for each sector.

Summary Tonnage by Destination, County of Smith, 2011

Destination	Tons	Percentage (%)
Smith County Class III Landfill Kennedy Road Carthage, TN	5,968.71	36%
Smith County Class I Landfill Kennedy Road Carthage, TN	10,481.62	64%
Total		16,450.33

SECTION 4:

REGIONAL COLLECTION SYSTEMS

Provide a detailed description of 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. (complete paragraph)

Solid Waste and Recycling Collection Services

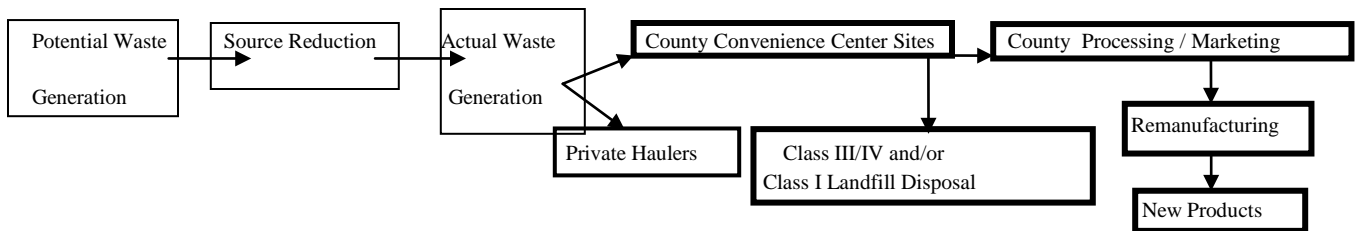
Smith County currently operates (6) convenience centers in the county and (1) Landfill. The convenience centers are operated by the county and trash is taken daily to the landfill, Smith County, Class I and III/IV landfill, which is located at Landfill Road in Carthage, Tennessee. Year-round Smith County residents can take computer E-Waste to one of the convenience center sites. The Smith County Solid Waste Department accepts paint at its convenience centers. If convenient you can dry your latex paint to a solid at home and dispose of it in your household garbage.

The amount and type of recyclable materials grow with each day of operations. The staff is dedicated and enthusiastic about waste reduction and the prospect of researching all potential end-use options and markets for any waste material generated. The energy amassed during the infancy of this program has been inspiring to anyone fortunate to tour the facilities, interview staff members and privileged to work with local leader’s soliciting input on any new options, technologies, etc.

Smith County Regional Solid Waste Life-Cycle

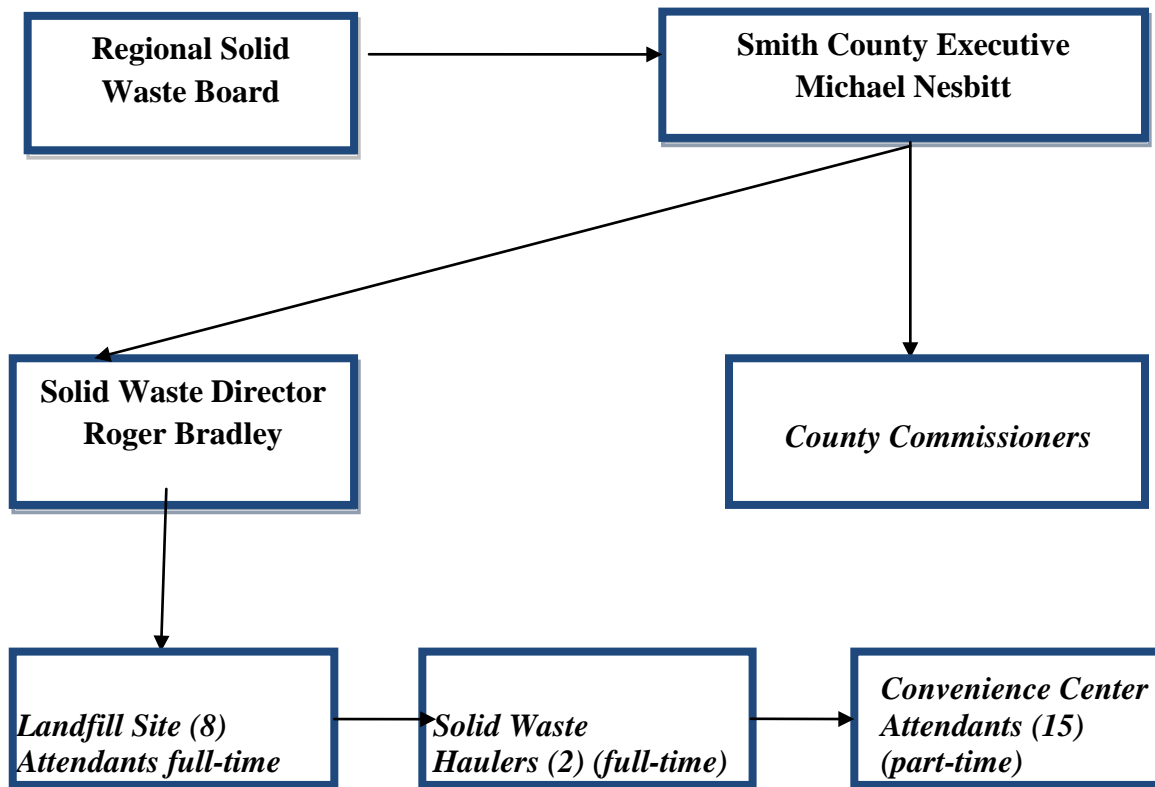
Theoretically, the life-cycle of Waste Generation in the Region follows the management options illustrated below. Potential waste generation can be reduced at the source through measures, such as residents reusing materials of remaining value. Manufacturers can also reduce residual waste by modifying internal operations to efficiently manage feedstock used for producing commodities. What remains is the Actual Waste Generation collected at the County Convenience Center Sites and/collected by any private haulers.

At the County Convenience Center sites, solid and demolition waste is collected in separate containers for disposal in the respective landfills provided at the local County landfill. The County also provides recycling containers for recyclable material that will be processed, marketed and remanufactured into new products. The value of recyclables is expressed in marketing sales paid to the County. Lastly, brokers and markets sell recyclable products to manufacturers producing new products. (Adapted from Life-Cycle Study of Municipal Solid Waste Management, EPA, July 1995).

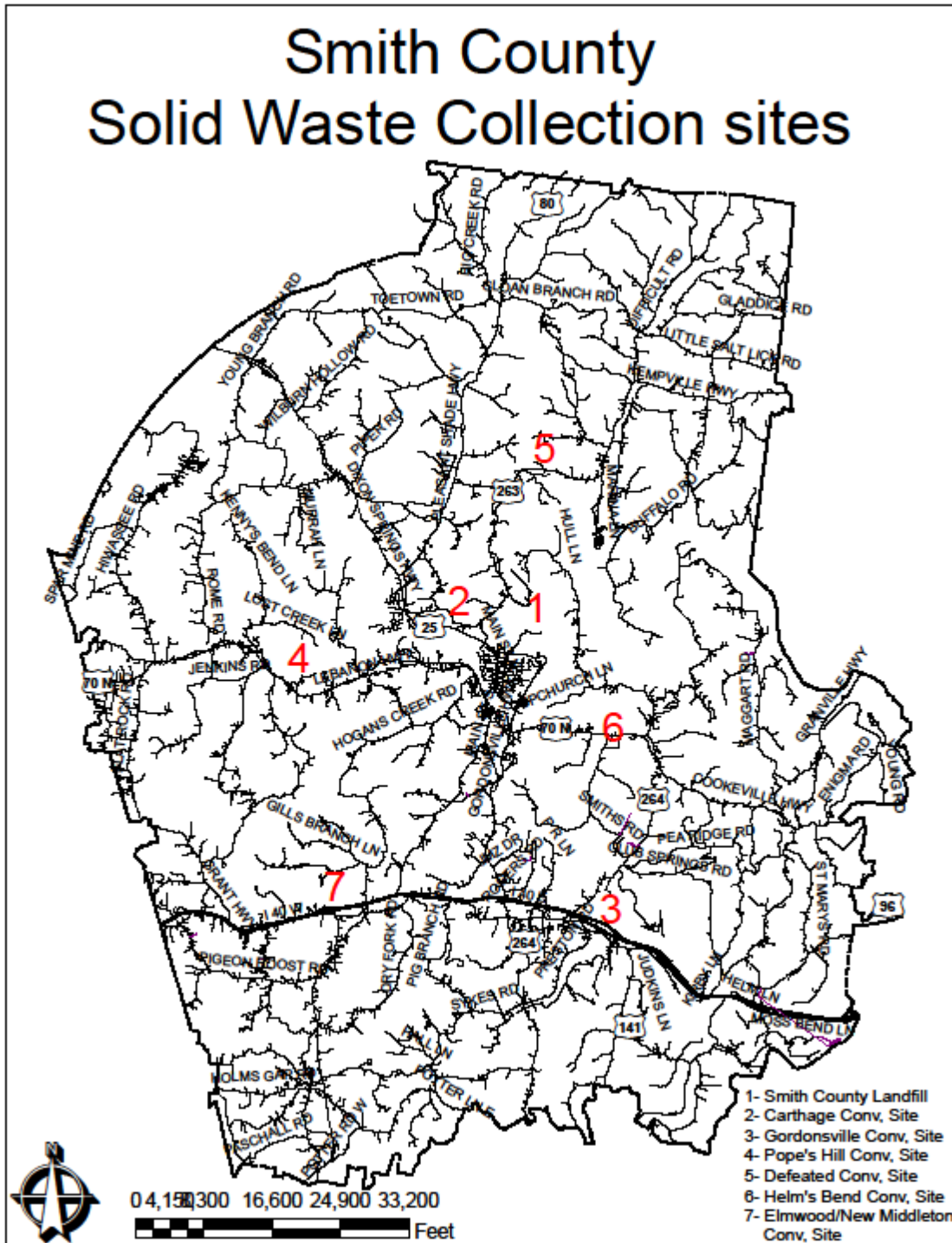


SECTION 5:

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 any short comings in service and note what might be needed to fill this need.



Many of the region’s successes can be attributed to the public education programs on appropriate waste reduction, management, and disposal supplied by the Smith County Solid Waste Department. The educational programs that are offered not only encourages positive waste management habits by the public, but also builds a constituency that is willing to fund a more sound waste management.



Source: Map provided by Smith County Planning Department

Smith County

Smith County has six (6) locations for recycling and disposing of household trash, which includes: Carthage, South Carthage, Gordonsville, and other unincorporated areas. The center sites and hours of operation are as follows:

Convenience Centers and Landfills

- Commercial waste goes to transfer station
- General public waste goes to Convenience Sites
- Construction and Demolition wastes go to the landfill

Recycling Centers (cardboard, newspaper, office paper, number 1 and 2 plastic, glass, aluminum cans, light goods, any various metals)

Collection Sites

Convenience Center #1

**Carthage (Hwy 25)
140 Dixon Springs Hwy.
Carthage, TN. 37030
(615) 735-9639**

**Hours of operation:
Monday-Saturday 6:30 a.m.-5:00 p.m.
Sunday 1:00 p.m.-5:00 p.m.
Recyclables collected: Metals, Paper,
Paint, Plastics, and Demolition**



Convenience Center #2

**Defeated Convenience Center
210 Defeated Creek Hwy.
Pleasant Shade Tennessee 37145
(615) 774-3394**

**Hours of operation: Monday- Saturday
6:30a.m.-5:00p.m.
Recyclables collected: Metals, Paper,
Paint and demolition.**



Convenience Center # 3

Helms Bend

38 Helms Bend Lane

Carthage, TN. 37090

(615) 735-1544

Hours of operation: Monday-Saturday

Sunday-1 pm. to 5 p.m.

6:30a.m.-5:00p.m.

Recyclables collected: Metals, paper, plastic, tires, used oil, e-scrap, paint, and demolition.



Convenience Center #4

Gordonsville Convenience Center

171 Lancaster Highway

Gordonsville, TN. 38563

(615) 683-6743

Hours of operation: Sunday-Saturday

6:30 a.m.-5:00p.m.

Recyclables collected: Metals, paper, plastic, tires, used oil, e-scrap, paint, and demolition.



ConvenienceCenter#5

Middleton Convenience Center

37 Grant Highway

Gordonsville, TN. 38563

(615) 683-2012

Hours of operation: Monday, Tuesday, Thursday,

Friday, and Saturday 6:30 a.m. to 5:00 p.m.

Recyclables collected: Metals, Paint, and other

New



Site #6
Pope's Hill
524 Lebanon Highway
Carthage, TN. 37030
(615) 735-1544
Hours of operation: Monday-Saturday
6:00a.m.-5:00p.m.
Sunday: 1:00p.m.-5:00p.m.



Smith County Landfill Site
Landfill Road
Carthage, TN. 37030
Hours of operation: Monday-Saturday
(615) 735-1941
6:00a.m.-5:00p.m.
Sunday: 1:00p.m.-5:00p.m.



<u>County</u>	<u>Residential</u>	<u>Industrial</u>	<u>Residential</u>	<u>Commercial</u>	<u>Institutional</u>	<u>Other</u>	<u>Total</u>
<u>Smith</u>	<u>Recycling</u>	<u>Recycling</u>	<u>Hazardous</u>	<u>Recycling</u>	<u>Recycling</u>	<u>Recycling</u>	
<u>2011</u>			<u>Waste</u>				
	<u>3789.46</u>	<u>28,166.67</u>	<u>.10</u>	<u>7,168.46</u>	<u>N/A</u>	<u>10,085.15</u>	<u>49,209.84</u>

Measurement of Regional Waste Reduction Goal

Table 5A

County	Waste Reduction Goal Calculation Method			
	Compared to Base Year	Population Ratio	Economic-Population Ratio	Qualitative- Real Time
Smith	41%	30%	30.0%	30.0%
25% Waste Reduction Goal Achieved	Yes	Yes	Yes	Yes

Source: TDEC, Division of Solid Waste

Variables Affecting Successful Regional Waste Reduction Efforts in Smith County

No significant setbacks have occurred. The County continues to encourage local businesses to participate in waste reduction activities and report figures to the Department. Annual outreach and encouragement directly with appropriate business contacts is initiated by the Department. Landfill operations and management costs are increasing.

Future Regional Waste Reduction Program in Smith County

The fundamentals of public works infrastructure to supply water, sewer, electricity and natural gas as necessary utilities, for instance, must be incorporated into the foundation of collecting waste generated from the source, be it residential or business.

Transportation, disposal and management costs to support other facets of the waste utility industry are legitimate comparisons with the cost of providing other utilities to a modern society. Water, sewer, gas, etc. are considered necessary creature comforts for human beings. Trash management, and even environmental protection, such as water pollution control, is not considered an immediate personal comfort when the freedom to eliminate the waste can be easily and creatively practiced in the form of illegal dumping, burning or throwing trash in your own backyard without consequence.

The connection of properly containerizing waste, revering the long-term benefits of self-preservation and safeguarding necessary environmental resources for the continued existence of oneself have not been successfully internalized to produce significant behavioral changes. Conserving any resource, whether it be water, electricity or landfill space, is not practiced concurrently. Smith County will continue to encourage waste reduction behavior for both resident and businesses.

Smith County currently operates six Convenience Center Sites and the Landfill with a minimum number of staff. All positions including part-time employees and community service workers are vital for future solid waste management at these facilities. The Solid Waste Department hauls solid waste and recyclables from the six Convenience Center sites. After recyclables have been sorted and placed in storage bins, all other solid waste material is then transferred to the landfill site. Educational programming is provided for the region.

The department relies on grants to accomplish their tasks and the need for equipment is constant. At this time the department needs additional boxes and recycling roll-off containers to maintain and grow their business and school recycling program. Currently they estimate that they will need a new dump truck and a horizontal baler in the future to continue providing the services to the region. In addition, the current office space at the Recycling Center is very crowded. The Solid Waste Director and staff have difficulties conducting routine business inside the small office.

The main setback for the Smith County Solid Waste Department is availability of funds to replace and repair equipment to operate the landfill, and the Convenience Center sites. The need to purchase equipment such as: A tub grinder, trash compactor, compactor receiver box, shredder, (2) Roll-off trucks, a dump truck, a forklift, recycling containers, a paint air-pump, and

land to construct a new convenience center site, is imperative for the continuation of the Solid Waste daily operations.

Tires continue to be a problem with man-hours spent in the handling of tires. Tires are collected at the landfill and picked up by King Tire Company, located in Oneida, Tennessee.

North Central Recycling of Trousdale County accepts the recyclables from Smith County Solid Waste to include: Plastic #1 and #2, Newspaper, and Cardboard. These items are contained in bins at each convenience center site until a full load is obtained. On average, about twice per month, Plastics, Cardboard, and Newspapers are taken to North Central Recycling from Smith County. Around 2 tons of plastic are recycled, and around 6 tons of newspaper and cardboard are recycled per month. Smith County benefits from this partnership by not having to place the extra material into the landfill, and it helps to keep the county free of unsightly garbage on the highways and at illegal dumpsites. The county is also focusing its future waste reduction effort on education programs in the schools, education in the local newspapers, and road signs. The county will continue to focus their efforts on increasing the number of diverted tons of solid waste and recyclable materials that is collected from private businesses and industries.

Potential waste generation can be reduced at the source through measures, such as educating citizens about the three R's (reduce, reuse, recycle). Education has been identified as the number one (#1) factor in increasing diversion rates in communities around the world. Along with reduction measures from citizens, the commercial and manufacturing sector can also reduce residual waste by modifying internal operations to efficiently manage the waste.

With better equipment the County can continue having a positive impact on the volume reduction of the general daily volume of waste received. The county will continue to seek grant funding availability, and will continue to search out diverse markets for their recycling materials to attain the best prices.

The County will also continue to seek technical assistance from the Upper Cumberland Development District staff in regards to waste reduction efforts and additional educational measures. Sustainability will depend on public, governmental and business sector's response to produce desired outcomes for improving the Solid Waste program, as well as the health and welfare of all citizens in Smith County. With changing environmental regulations, it is important that the Solid Waste department remain knowledgeable and aware of ways to improve and utilize local participation when possible. A partnership between the County and City government officials is necessary to share the investment of a comprehensive community waste reduction program.

SECTION 6:

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?

After interviewing key stakeholders in the Smith County community, the Upper Cumberland Development District staff assessed that there appears to be a somewhat positive attitude towards recycling. More environmental education programs could build a stronger knowledge of the need for recycling of solid waste, and additional funding opportunities could help the County to fulfill the needs for solid waste programs.

The Solid Waste Department partners with the School District throughout the year to provide grade school children with educational programs, flyers, pencils, activity books, litter bags, and other items to help increase their awareness of the importance of keeping Smith County beautiful and why it's important to recycle solid waste.

In addition, the general public is made aware in ads through the local media of the importance to recycle, reuse, and reduce solid waste. Recycling is just one step away from the garbage can and is merely a stop gap measure. The larger picture of best management practices involves waste reduction and material reuse and this is where Smith County Solid Waste Department can realize success, with the support of the County Mayor and Commissioners, and the Regional Planning Board members.

Opportunities do exist to improve the Smith County Solid Waste Department, although on a small scale with the limited funds and staff more emphasis should be placed upon recycling glass. While Smith County has limited space to store glass items, this should be a priority in the future for the Solid Waste Department. While there is no tipping fee charged for the glass of Smith County residents, the amount of space that is consumed by the disposed glass items at the landfill site is tremendous which means that the landfill have a shorter life span.

SECTION 7

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 it 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.

Summary Tonnage by Destination, County of Smith, 2011

Table 7A

Destination	Tons	Percentage (%)
Smith County Class III Landfill Kennedy Road Carthage, TN	5085.36	33%
Smith County Class I Landfill Kennedy Road Carthage, TN	10457.86	67%
Total	15543.22	100.0

Sources: SW County of Origin Report Remaining Life Survey, Class III Landfill Sites in Tennessee, TDEC, Division of Solid Waste Management, June 4, 2012

**10-year Regional Disposal Assurance in Smith County in 2011
Total Tons Generated, County of Smith, 2000 to 2011**

Table 7B Source: TDEC APR Reports

Year	Residential Solid Waste (Tons)	Residential Recycling (Tons)	Residential Hazardous Waste (Tons)	Commercial Recycling (Tons)	TOTAL (Tons)
2000	44,112.00	0	0	0	44,112.00

2001	34,684.00	0	0	0	34,684.00
2002	48,194.00	0	0	0	48,194.00
2003	42,877.00	12,830.30	0	2,838.46	58,545.76
2004	58,633.00	10,623.00	16.92	2,354.02	71,626.94
2005	58,232.68	10,964.39	27.33	3,230.18	72,454.58
2006	66,408.00	14,868.00	24.07	3,224.00	84,524.07
2007	69,243.84	14,073.43	18.24	0	83,335.51
2008	72,473.35	14,204.12	6.90	0	86,684.37
2009	65,384.39	13,576.62	12.98	28.08	79,002.07
2010	63,782.60	13,717.44	0	42.16	77,542.20
2011	63,238.96	10,628.14	1.42	8,989.55	82,858.07

In 2011 Smith County reduced the amount of Solid Waste tonnage that entered the Landfill from 63,782.60 in 2010 to 63,238.96 tons in 2011. This is an indicator that more people in Smith County are recycling their solid waste materials.

Smith County transfers solid waste generated from convenience center sites to the Landfill sites. Reported figures from the TDEC SW County of APR FY 2011 show tons of solid waste generated in Smith County.

Table 7C

Material Name	Residential Programs	Commercial All Programs	Industrial All Programs	Other Programs
Metal				
Ferrous		3,432.00	641.79	
Non-Ferrous		4.0	11,027.00	
Mixed Metals	245.73	1103.00	438.32	
TOTAL METAL	245.73	4539.00	12,107.11	
Paper				
Corrugated	169.90	816.06	14,928.56	
TOTAL PAPER	169.90	816.06	14,928.56	
Plastic				
#2 HDPE				
Mixed #1 and #2	10.86		9.0	
TOTAL PLASTIC	10.86		9.0	
Other Recyclables				
Tires	38.48			
Other Organic Recycle				
Mulch		423.40		10,000.00
Batteries				
Lead-Acid		2.0		85.15
Dry Cell				
TOTAL BATTERIES		2.0		
Automotive Fluid				
Used Oil				
Miscellaneous-Elect.	35.01			
Other (1)-Paint	1.40		1,390.00	
Recycled C&D Debris	3,288.08	11,645.10		
Other-Sewer Sludge		1,390.00		
	3,789.46	20,203.56	27,935.67	10,085.15
Industrial By-Product				889.00

Population Served for City and County Convenience Center Site, Provider, Service Area, Population Service.

Table 7D

Year	Smith Co.	Carthage	South Carthage	Gordonsville	Unincorporated
2011	19,166	2,400	1,320	1,326	14,810
Provider of Service	Service Area	Available Service for 2011 Population Total	Frequency of Service (Weekly, Bi-weekly, on call, etc.)	Estimated Annual Tons Collected	Type Service (Door-to-Door) or Convenience Center
Smith County Solid Waste Department	County-wide	6 days per week And Once weekly for some	6 days per week And Once weekly for some	6 days per week and Once weekly for some.	CC Sites and/or Door to Door Services with subscription
Private Haulers*		NA	Weekly	NA	

Several private haulers operate waste collection service for residents and businesses in Smith County. Information on customers and area served and tonnages collected is not available and considered confidential by the private sector.

Waste Stream Management

Table 7E

Jurisdiction or Sector	Solid Waste Stream Collection	Solid Waste Disposal Options	Present Problem Waste Handling	Future Problem Waste Handling 2007-2012	Other Problem Waste Types
Smith County	<p>County Convenience Center drop-off sites.</p> <p>Available to all residents of the County and to other counties throughout the region.</p> <p>Residential solid waste collection sites accept county residential and business solid waste and recyclable materials at the six Convenience Center sites.</p>	Smith county Landfill Site.	<p>Waste tires:</p> <p>Latex paint:</p> <p>Demolition materials:</p> <p>Glass:</p>	<p>Waste tires:</p> <p>Waste tire contract. Oil, Inc. contract</p> <p>Latex paint: Sanitation Department in-house and public reuse.</p> <p>Electronics: Collected, marketed by Sams Recycling of Smith County.</p>	<p>HHW collected at mobile collection event.</p> <p>HHW event is held to collect household and yard chemicals, medicines, and pesticides.</p>

This analysis does not include indirect or depreciation costs or future annual costs associated with additional employees, salary increases, facility operations, landfill monitoring costs, etc. Indirect costs are usually calculated based on the support services for solid waste management within local government departments, such as the offices of the executive, budget director, trustee, etc. Depreciation is a method of allocating the costs of capital outlays over the useful life of the resource purchased, such as equipment or facility development. Local governments

should recognize annually the cost of support services and depreciation for all assets until they are fully depreciated when utilizing full-cost accounting to plan for future revenue sources.

However, for purposes of this Needs Assessment, to project the future costs of equipment and facilities, Future Outlays of equipment and facility expansions to support potential program growth over the next five (5) years, will be calculated to anticipate expenditures of cash in the future by amortizing annual costs.

Smith County will evaluate alternative revenue sources, such as user fees and waste management services expand to meet the growing needs of residents and additional state and federal regulations. Performing a full-cost accounting study, Putnam County can:

- Determine the cost of solid waste management services;
- Adopt a more business-like approach to solid waste management;
- Improve methods of evaluating privatization initiatives;
- Determine an appropriate mix of solid waste management services for the future;
- Establish rates and user charges to fund services for the future.

In an effort to manage and reduce the amount and types of waste generated in an industrialized, “throw- away society,” local governments plan to develop programs and construct collection and disposal facilities incrementally over time. The annual budget and the 4-year re-election process limit long-term planning to construct facilities to grow into and not out of over a longer time period than public officials are willing to risk.

SECTION 8:

Chart 8A Using the example shown below, 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.

(B) Provide a chart or other graphical representation showing service area coverage by public and private waste collectors within the county and municipalities. Include provider’s name, area of service, population served by provider, frequency of collection, yearly tons collected, and the type of service provided.

Chart 8 A

Site Name(s)	Current Disposal by Smith Co.	Maximum Capacity	Projected Life of Facility	Shortfalls in Materials Management
Landfills				
Smith County Landfill/	63,238.96 tons	N/A	years	Antiquated equipment and lack of funds for additional staff contribute to an inability to grow the program substantially

Chart 8B

Provider of Service	Service Area	Population Total Under This Service	Frequency of Service (Weekly, Bi-weekly, on call, etc.)	Annual Tonnage 2010	Type Service (Balefill), Convenience Center, (Green Box)
Pickett County Landfill/Recycling Center	Pickett County	5077		Class I: 11,652.88	Drop Off
Barnes Ridge Convenience Center	Pickett County	5077	Once a week	2534tons included in total	Drop Off
Private Haulers	County wide	5077	Dependent on contract with customer	Larry Brown- 1047.8 Terry Ford- 322.4 Larry Anderson- 107.0 A-1 Trash- 88.68	Drop Off

The Solid Waste Manager is responsible for all solid waste and recycling daily operations in the County and answers directly to the Smith County Executive. The solid waste board, County Commission and the Putnam County Executive evaluate program planning, budgeting and implementation. The County Litter Control Officer supervises inmates during daily operations at the Recycling Center and roadside litter pick-up.

SECTION 9:

Complete the following chart 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.

Expenditures			
Description	Present Needs \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$131,554.00		\$131,554.00
Transportation/hauling			
Collection and Disposal Systems			
Equipment	\$23,310.00		\$23,310.00
Sites			
Convenience Center			
Transfer Station			

Recycling Center			
MRF			
Landfills		(Loss) -\$275,703.00	
Site			
Operation	\$61,976.00		\$61,976.00
Closure (Depreciation)	\$42,756.00		\$42,756.00
Post Closure Care	\$116,162.00		\$116,162.00
Administration (supplies, communication costs, etc.)			
Education	\$3,428.00		\$3,428.00
Public			
Continuing Ed.			
Capital Projects			
TOTAL EXPENDITURES	\$379,186.00	(Loss) -(\$275,703.00)	\$379,186.00
REVENUE			
Host agreement fee			
Tipping fees	\$88,237.00		\$88,237.00
Property taxes	\$214,040.00		\$214,040.00
Sales tax			
Surcharges			
Disposal Fees			
Collection charges	\$15,246.00		\$15,246.00
Industrial or Commercial charges			
Residential charges			
Convenience Centers charges			
Transfer Station charges			
Sale of Methane Gas			
Other sources: (Grants, bonds, interest, sales, etc.)	-\$925.00		(\$925.00)
	\$1,400.00		\$1,400.00
		(-\$57,933.00)	-\$57,933.00
Investment Income	\$3,255.00		\$3,255.00
TOTAL	\$321,253.00	(Loss) -(\$57,933.00)	\$321,253.00

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

- Regional Planning Board Involvement;
- Expansions and Upgrades of Residential Collection Services and Facilities;
- Pursuing all Grant Funds for Equipment and Facilities;
- Utilize Technical Assistance Providers;
- Research Technologies and Other Program Options;
- Promote Other Waste Reduction Efforts;
- Expand Recycling Material Types and Amounts Collected;
- Garner Competitive Market Prices for Recyclable Materials;
- Provide Employee Work and Equipment Safety Training;
- Maintain Flexible Problem Waste Collection;
- Continue Aggressive Public Outreach, Education Program; and
- Expand Business and School Recycling Collection Program.

This list is neither conclusive nor listed in priority. Sustainability will depend on public, governmental and business sector response to produce desired outcomes for improving the

infrastructure, as well as the health and welfare of all citizens in Smith County, including Carthage, South Carthage, and Gordonsville. The list is meant to be a work in progress that is sensitive and flexible to an unpredictable future of local needs, changing environmental regulations, the means to continue encouraging enthusiastic efforts of the Sanitation Department staff, and expand local participation when possible. A partnership between the County and City government officials is necessary to share the investment of a comprehensive community waste reduction program.

SECTION 10:

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.

Revenues

Investment Income	\$ 3,255.00
County Property Taxes	\$214,040.00
Tipping Fees	\$ 88,237.00
Sale of Recyclable Materials	\$ 15,246.00
Solid Waste Grants	<u>\$ 1,400.00</u>
TOTAL	\$321,253.00

The Solid Waste Program of Smith County developed a 10-Year Plan for short and long-term solid waste services, as required by The Solid Waste Management of 1991. The Table below summarizes the existing programs, the 5-Year Update Program Plan, and the Tennessee Solid Waste Management Plan as required by the Act of 1991.

Equipment

The table below provides a list of the potential equipment for continued and expanded operations of an integrated solid waste management program provided by Smith County for the Region over the next five (5) years. Equipment is not listed in priority of need. Equipment costs are estimates only and should only be considered a baseline for future planning.

Future Waste Management Equipment Needs

Table 10.1

PUTNAM COUNTY			
Equipment	Operational Use	Estimated Cost (2007)	Potential Revenue Source
Packer and Box	Material containerization.	\$40,000	Grants/General Fund Appropriation
Horizontal Baler	Material management.	\$15,000	Grants/General Fund Appropriation
Vertical Baler	Material containerization.	\$15,500	Grants/General Fund Appropriation
3 Recycling Containers	Material containerization	\$17,700	Grants/General Fund Appropriation
Additional Convenience Center Sites	Material Collection.	\$11,000	Grants/General Fund Appropriation
		Total	\$99,200

SECTION 11:

Discuss this region's plan for managing their solid waste management system for 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 State requires that a county provide a minimum level of service of there if less than 90 percent collection coverage provided by the private and public sector. This involves the establishment of convenience centers that are adequate to serve all residents.

The County continues to encourage local businesses to participate in waste reduction activities. Several workshops and presentations are scheduled annually to promote in-house waste reduction, environmental stewardship and support of the County recycling program. Additionally, some businesses are improving their operational costs through recycling income.

Through implementation of this comprehensive, updated solid waste management plan, Smith County will continue to provide for the efficient and environmentally sound management of solid waste, including waste disposal and waste reduction, for the next five (5) years.

Future Waste Management Equipment Needs

Table 11.1

SMITH COUNTY			
Equipment	Operational Use	Estimated Cost (2012)	Potential Revenue Source
Tub Grinder	Material containerization.	\$250,000.00	Grants/General Fund Appropriation
Trash Compactor	Material management.	\$30,000.00	Grants/General Fund Appropriation
Compactor Receiver Box	Material containerization.	\$10,000.00	Grants/General Fund Appropriation
Shredder	Material Collection.	\$12,000.00	Grants/General Fund Appropriation
Roll-Off Trucks (2)	Material Collection.	\$90,000.00	Grants/General Fund Appropriation
Dump Truck	Material Management.	\$35,000.00	Grants/General Fund Appropriation
Forklift	Material containerization	\$12,000.00	Grants/General Fund Appropriation
Recycling Containers	Material containerization	\$7,548.00	Grants/General Fund Appropriation
Paint Air Pump	Material containerization	\$550.00.00	Grants/General Fund Appropriation
Land/Convenience Center Site	Material Collection.	\$55,000.00	Grants/General Fund Appropriation
Total			1,297,775.40

Facilities

Some examples of planned improvements and expansions to the solid waste management systems over the next (5) years include: Recycling Center asphalt paving, interior push-walls, glass cullet and material storage bays, building retrofits, indoor/outdoor security system.

A Multi-Purpose Waste Management Facility may be constructed within the next five (5) to service equipment and collection vehicles and provide storage for non-hazardous problem wastes, such as latex paint and electronic waste.

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

- Regional Planning Board Involvement;
- Expansions and Upgrades of Residential Collection Services and Facilities;
- Pursuing all Grant Funds for Equipment and Facilities;
- Utilize Technical Assistance Providers;
- Research Technologies and Other Program Options;
- Promote Other Waste Reduction Efforts;
- Expand Recycling Material Types and Amounts Collected;
- Garner Competitive Market Prices for Recyclable Materials;
- Provide Employee Work and Equipment Safety Training;
- Maintain Flexible Problem Waste Collection;
- Continue Aggressive Public Outreach, Education Program; and
- Expand Business and School Recycling Collection Program.

This list is neither conclusive nor listed in priority. Sustainability will depend on public, governmental and business sector response to produce desired outcomes for improving the infrastructure, as well as the health and welfare of all citizens in Smith County, including Carthage, South Carthage, and Gordonsville. The list is meant to be a work in progress that is sensitive and flexible to an unpredictable future of local needs, changing environmental regulations, the means to continue encouraging enthusiastic efforts of the Sanitation Department staff, and expand local participation when possible. A partnership between the County and City government officials is necessary to share the investment of a comprehensive community waste reduction program.

The table on the following page provides a minimum list of the facilities for planned constructed and expanded, in no particular order. Cost estimates are only to be used as a baseline for planning purposes.

Future Waste Management Facility Construction and Upgrades

Table 11.2

SMITH COUNTY			
Facility	Facility Betterments	Estimated Cost (2012)	Potential Revenue Source
Convenience Center Collection Site Development			
Planned Convenience Center Collection Site Construction	Site preparation, paving, fencing, gates, attendant sundries, utilities, equipment pads, signage etc.	\$50,000	Grants/General Fund Appropriation
Recycling and Existing Convenience Center Sites			
Recycling and CCC Site Upgrades	Asphalt paving, push-walls, cullet and storage bays, indoor/outdoor security system, building retrofits.	\$50,000	Grants/General Fund Appropriation
Multi-Purpose Waste Management Facility: repairs/maintenance, problem waste storage, etc.	Facility construction for waste management material handling: collection vehicles, heavy equipment, repair tools, repair parts inventory.	\$30,000	Grants/General Fund Appropriation
		Total	\$130,000

Planned Solid Waste Management System 2007 – 2012

Table 11.3

Solid Waste Program	Existing Regional Solid Waste Programs	Future Regional Solid Waste Programs	Tennessee Mandated Plan
Residential Solid Waste Collection	<p>Smith County provides residential collection of solid waste at eight (6) CCC sites.</p> <p>Private haulers provide collection/disposal services for local residents and businesses.</p>	<p>Continue County residential drop-off service.</p> <p>Maintain efficient collection equipment and facilities.</p> <p>Continue private hauling services.</p>	<p>County to provide CCCs for residents according to population or service area, maintain required design and operational standards.</p>
Recycling	<p>Cardboard, newsprint, aluminum and steel cans, mixed paper, magazines, phonebooks, electronics, latex paint, used oil, scrap metal, plastic drink containers, waste tires, glass bottles, waste tires and batteries.</p> <p>As a means of waste diversion, Class III/IV waste collected separately at each center and transported to the County Class III/ Landfill for disposal.</p>	<p>Increase business and school recyclables collection. Expand types and amounts of materials collected at drop-off sites.</p> <p>Expand Recycling operations to collect, manage, process additional materials types and amounts.</p> <p>Continue material processing maximizing available market prices.</p>	<p>County to provide eight (8) CCCs and one (1) transfer station</p>

Waste Reduction	<p>Smith County collects recyclables from public and private sector, tracks business waste diversion activities.</p> <p>As a means of waste diversion, Class III waste collected separately at each center and transported to the County Class III Landfill for disposal.</p> <p>Exceeded 25% Regional Waste Reduction Goal.</p>	<p>Continue collecting recyclables from public and private sector, tracking business waste diversion activities to achieve 25% Regional Waste Reduction Goal.</p> <p>Continue waste disposal of Class III/IV local County Landfill.</p>	<p>Continue achieving 25% waste reduction goal.</p>
Problem Waste Management	<p>Smith County provides collection at Convenience Center Sites for used oil and scrap metal.</p> <p>The Convenience Centers collect used oil, used oil filters, automobile fluids, e-waste, latex paint, waste tires.</p> <p>HHW TDEC mobile collection events to be scheduled.</p>	<p>Continue problem waste collection and expand service as needed.</p> <p>HHW TDEC mobile collection events to be scheduled.</p>	<p>County has restrictions related to disposal of tires, paint cans, refrigerators, freezer, fluids, and batteries.</p> <p>County to provide HHW collection events, when state scheduling is provided.</p>

Source: Smith County Solid Waste Director

Cite all sources, documents, survey's, and contacts.

Sources: