

RUTHERFORD COUNTY SOLID WASTE  
NEEDS ASSESSMENT

FY 2016



**Prepared by:**

Greater Nashville Regional Council  
501 Union St., Floor 6  
Nashville, TN 37219-1705

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

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

### ***Item 1 - Demographic Information & Projections***

*Provide a table and chart of the region's population during the past 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 county and municipality populations. Considering the trends, discuss the effect on the solid waste infrastructure needs over the next five (5) years.*

*Historic Population - Rutherford County has experienced a steady growth in population over the past decade. According to the University of Tennessee's Center for Business and Economic Research (CBER) annual population estimates, between 2006 and 2015 Rutherford County's total population increased from 228,829 to 305,703, a gain of 76,874 residents. This growing trend is expected to continue through the next five years, the population is estimated to be 359,595 in 2021. As shown in Chart 1 and Table 1 below, Rutherford County and its municipalities steadily increase in population reaching an estimated population in 2015 of 305,703. The University of Tennessee's Center for Business and Economic Research's 2010-2064 countywide projections are based off of the most recent 2010 Census, therefore, more precise than their 2000-2020 County and Municipalities projections, which were based off of the 2000 Census. With the addition of new industry in Rutherford County, the population may actually increase at a faster rate than the CBER projection and reach 359,595 residents much sooner than expected. See Charts 1 and 3 showing population change in Rutherford County and its municipalities.*

**Table 1: Rutherford County Historic Population 2006-2015**

<b>Year</b>	<b>Rutherford County</b>	<b>Eagleville</b>	<b>Murfreesboro</b>	<b>LaVergne</b>	<b>Smyrna</b>	<b>Unincorporated</b>
2006	228,829	475	93,851	27,460	34,793	72,250
2007	230,980	503	98,316	29,075	36,489	66,597
2008	249,270	523	101,753	29,952	37,867	79,175
2009	256,985	536	106,553	31,052	39,067	79,777
2010	262,604	604	108,755	32,588	39,974	80,683
2011	271,076	565	116,153	33,175	41,467	79,716
2012	279,619	580	120,000	34,250	43,000	81,789
2013	281,596	595	125,700	35,325	44,500	82,138
2014	289,147	610	130,500	36,970	46,200	82,664
2015	298,612	732	126,118	25,440	38,281	87,550

*Sources: University of Tennessee Center for Business and Economic Research Population Projections for Tennessee Counties and Municipalities 2000-2020, Census Population Projections 2010-2064; 2010 Rutherford County Annual Progress Report; United States Census Bureau, 2010 Census Demographic Profile Data, Annual Estimates of Resident Population (2015); GNRC*

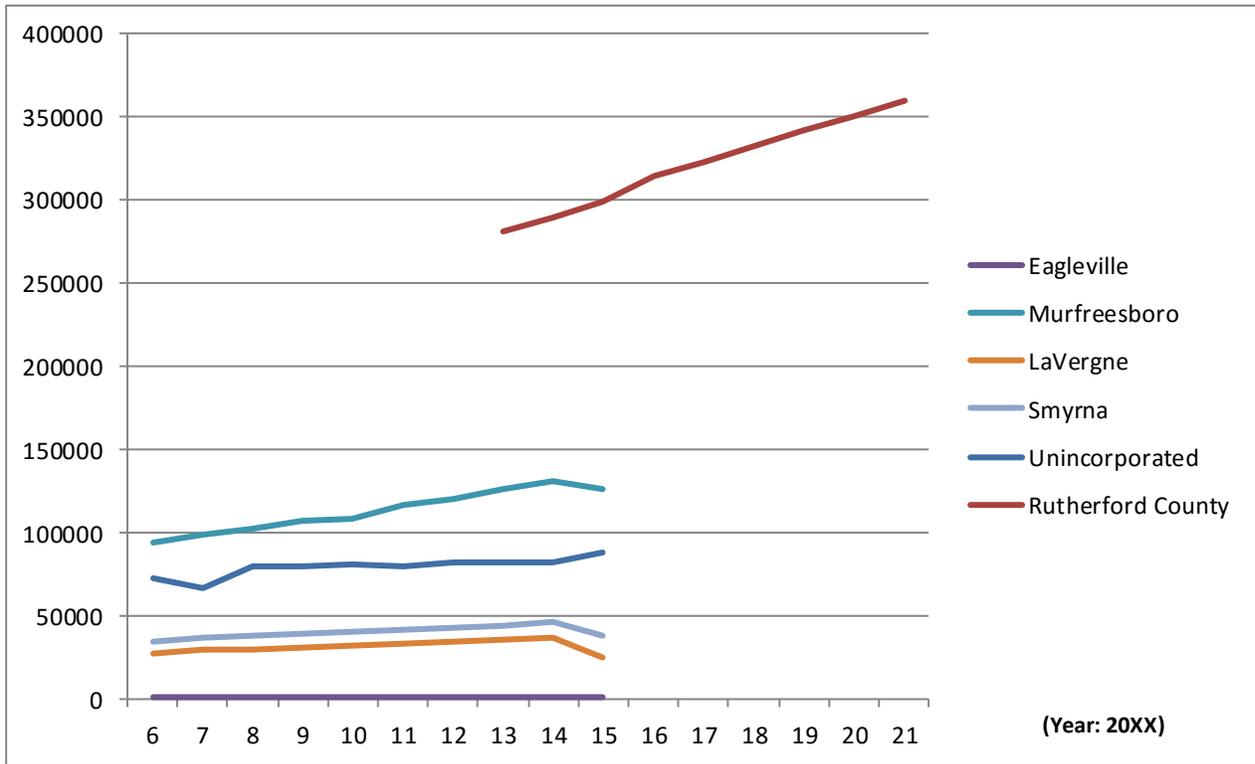


Chart 1 – Rutherford County Municipalities Historic Population (2006-2015) and Rutherford County Projected Population (2016-2021)

Sources: University of Tennessee Center for Business and Economic Research Population Projections for Tennessee Counties and Municipalities 2000-2020, Census Population Projections 2010-2064; Rutherford County 2010-2014 American Community Survey 5Year Estimates, ACS Demographic and Housing Estimates

Population Projections - Future projections indicate that Rutherford County will have continued steady growth. The University of Tennessee’s Center for Business and Economic Research’s projections show Rutherford County’s population reaching 359,595 in the year 2021.

Table 2: Rutherford County Population Projections									
	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Rutherford County Total</b>	281,596	289,147	298,612	314,543	323,441	332,411	341,421	350,488	359,595

Source: UT-Center for Business and Economic Research Census Population Projections 2010-2064; United States Census Bureau Population Division, Rutherford County 2013-2015 Population Estimates

The benefits of solid waste planning are to help address the potential added waste stream volume, ensure adequate convenience center numbers and locations as well as forecasting transportation needs and costs as precisely as possible. The best use of these projected numbers for solid waste planning may be in their ability to project the number of *new households* in the coming years. Using the University of Tennessee’s CBER population projections to examine the most aggressive projections of new residential solid-waste generators, the number of potential new households in Rutherford County is shown below in Table 3.

<b>Table 3: Rutherford County Total Household Projections</b>				
2010 U.S. Census Population of Rutherford County	2015 Population	Population Increase 2010-2015	Average Household Size	Potential New Rutherford County Households, 2015
262,604	298,612	36,008	2.46	14,637
<i>Source: UT-Center for Business and Economic Research Census Population Projections 2010-2064; United States Census Bureau Population Division, Rutherford County 2013-2015 Population Estimates</i>				

The implications for solid waste planning are related to the potential waste stream volume, convenience center numbers and locations, as well as transportation costs. The increase in potential households will have the effect of adding relatively large amount of residential waste, ultimately shortening the lifespan of Middle-point landfill, just Northeast of Murfreesboro. Murfreesboro is increasing in population at an alarming rate. Murfreesboro is currently one of the top 15 fastest growing cities with a population of 50,000 or more coming in at 13<sup>th</sup> place. This growth rate shows no signs of slowing down and will continue to add tremendous amounts to the solid waste stream for the foreseeable future. With Middlepoint Landfill having eleven (11) years and five (5) months left of remaining life, this population growth will be adding to the tons received per day, ultimately reducing the landfill's lifespan. This issue will need to be continually monitored and have a plan put in place for diversion of municipal solid waste and/or rerouting of waste to another landfill or facility.

**Item 2 – Analysis of Economic Activity within the Region**

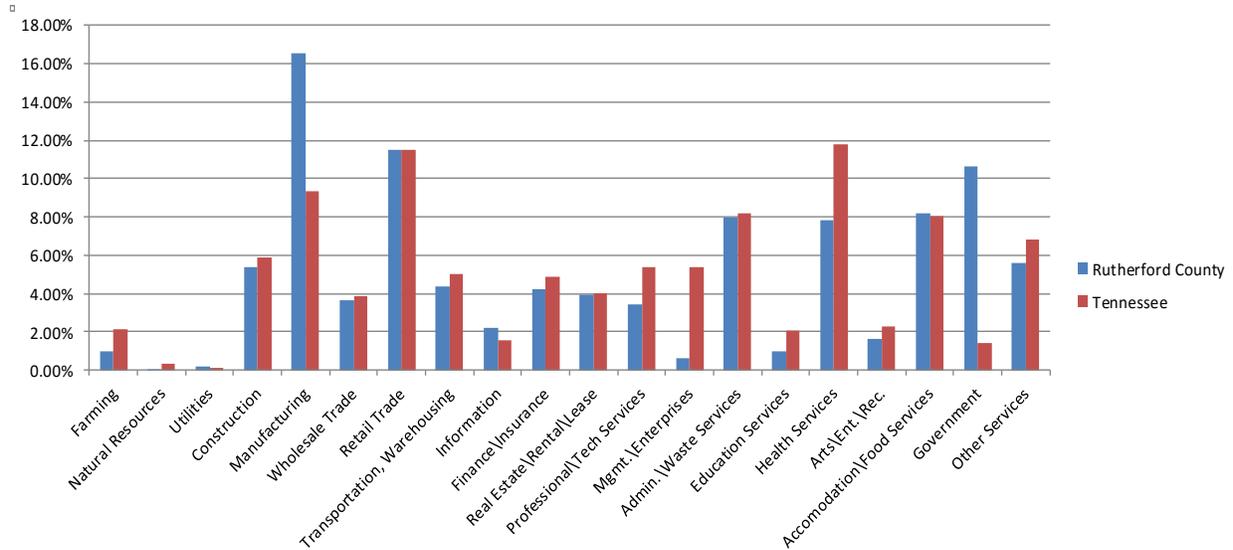
Provide a table and chart showing the region’s economic profile for the county and its municipalities for the last ten (10) years with a projection for the next five (5) years. This can be accomplished by using the following economic indicators:

- 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

<b>Table 4: Rutherford County Economic Data, Historic and Projected</b>					
<b>YEAR</b>	<b>LABOR FORCE</b>	<b>UNEMPLOYMENT</b>	<b>UNEMPLOYMENT RATE</b>	<b>PER CAPITA INCOME</b>	<b>RETAIL SALES</b>
2006	127,182	5,126	4%	\$30,441	\$3,118,811,000
2007	130,630	4,841	3.7%	\$31,168	\$3,243,081,000
2008	133,528	7,725	5.8%	\$31,797	\$3,196,083,000
2009	135,885	13,123	9.7%	\$30,559	\$3,011,142,000
2010	140,219	12,422	8.9%	\$31,561	\$3,153,056,000
2011	144,110	11,456	7.9%	\$32,658	\$3,342,658,000
2012	145,286	9,447	6.5%	\$34,988	\$3,486,198,000
2013	147,453	9,175	6.2%	\$35,113	\$3,643,130,000
2014	150,154	7,796	5.2%	\$36,100	\$3,796,581,000
2015	152,997	7,021	4.6%	\$37,105	\$3,924,355,000
2016	157,331	5,204	3%	\$38,197	\$4,052,802,000
2017	160,368	4,938	3%	\$39,393	\$4,185,596,000
2018	163,405	3,907	2%	\$40,690	\$4,320,945,000
2019	166,443	2,876	2%	\$42,080	\$4,459,200,000
2020	169,480	2,845	2%	\$43,572	\$4,600,997,000

*Sources: Woods and Poole 2015 TN State Profile; United States Department of Labor, Bureau of Labor Statistics, Data By County 2006-2015; GNRC*

Rutherford County’s labor force has grown since 2006, with a significant increase projected for the next five years. The unemployment rate for Rutherford County has paralleled with the State of Tennessee through the recession between the years of 2008 and 2013. Unemployment projections for 2016 through 2020 project decreases called for by the compiled dataset. Per capita income, as compiled by Woods and Poole, is projected to increase for the next five years. With the State of Tennessee’s 2014 per capita income estimate of \$24,811, as shown in the table above Rutherford County is projected to continue to surpass this State of Tennessee average for the next five years. Retail sales had a slight dip in 2008 through 2009, following the national recession, but quickly rebound in 2011 and the projections call for a significant increase in the next five years.



*Chart 4 - Rutherford County Employment vs. State of Tennessee*  
*Source – Woods and Poole 2015 TN State Profile*

Rutherford County’s employment does not quite follow then State of Tennessee’s employment trends, as shown in the single-year comparison above. Rutherford County is more dependent on manufacturing, government, retail trade, waste services, and just barely surpasses the Tennessee average in food service employment. Rutherford County lags behind the State averages for employment in farming, natural resources, utilities, construction, wholesale trade, transportation and warehousing, finance and insurance, professional or technical service, management and enterprise, education, health service, art and recreation sectors.

Rutherford County has a workforce of approximately 154,294 in 2015 with an unemployment rate of 5%. The unemployment rate has been steadily decreasing since the recession in 2008-2009 when the unemployment rate was approximately 10% in Rutherford County. The County has maintained a substantial manufacturing base totaling an estimated 24,978 jobs, led by industry leaders such as Nissan of North America and Bridgestone/Firestone. Since 2009, manufacturing employment has succeeded government employment in Rutherford County.

The chart and table below depict yearly totals in employment by sector for Rutherford County, and offer comparisons with the yearly totals and projections for the State of Tennessee, per Woods and Poole 2015 State Profile. As demonstrated by the single-year comparison above in Chart 4, Rutherford County has been heavily dependent on manufacturing, retail trade, waste, health and food service as well as government employment with little change for the next five years. The State of Tennessee has seen its education sector decrease steadily, with a rise in manufacturing, retail trade and health services.

**Table 5: Rutherford County, Tennessee Employment by Sector 2006-2020**

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Farming	1,639	1,561	1,534	1,506	1,499	1,502	1,455	1,441	1,451	1,460	1,469	1,478	1,487	1,495	1,503
Natural Resources	150	141	128	121	79	98	98	106	107	108	109	110	111	112	113
Utilities	220	254	280	300	300	321	331	329	331	332	334	335	336	337	338
Construction	8,936	9,905	8,823	7,862	7,131	7,131	7,337	7,572	7,837	8,108	8,359	8,582	8,801	9,019	9,238
Manufacturing	24,617	23,836	21,991	19,433	18,792	19,677	23,500	24,269	24,618	24,978	25,336	25,712	26,103	26,505	26,919
Wholesale Trade	6,453	5,863	6,040	5,789	4,836	4,414	4,601	5,427	5,478	5,514	5,542	5,564	5,584	5,603	5,619
Retail Trade	12,632	12,963	13,825	13,661	13,891	14,714	15,518	16,101	16,719	17,339	17,948	18,530	19,080	19,623	20,161
Transportation/Warehousing	6,247	5,749	5,561	5,247	5,321	5,702	6,034	5,401	6,483	6,573	6,670	6,774	6,882	6,993	7,107
Information Services	3,458	3,475	3,665	3,578	3,506	3,323	3,359	3,263	3,275	3,288	3,301	3,313	3,326	3,339	3,351
Finance/Insurance	4,392	4,702	4,887	5,206	5,406	5,620	5,800	5,945	6,151	6,367	6,592	6,825	7,068	7,320	7,582
Real Estate/Rental/Lease	4,707	5,354	5,737	5,599	5,517	5,569	5,475	5,584	5,745	5,910	6,080	6,255	6,434	6,619	6,808
Professional/Tech. Services	4,271	4,734	4,845	4,886	4,990	4,981	5,065	5,045	5,088	5,132	5,177	5,222	5,268	5,315	5,362
Management/Enterprises	355	564	871	874	994	1,003	949	961	968	975	982	988	994	999	1,004
Administrative/Waste Services	12,763	12,715	12,475	10,376	9,848	10,819	10,577	11,345	11,698	12,061	12,435	12,820	13,512	13,620	14,033
Education Services	1,000	991	1,100	1,120	1,156	1,218	1,245	1,369	1,411	1,454	1,498	1,542	1,587	1,633	1,679
Health Services	8,626	9,085	9,230	9,463	9,731	10,135	10,515	11,105	11,452	11,810	12,178	12,557	12,947	13,348	13,762
Art/Ent./Rec/	1,962	2,058	2,120	2,177	2,143	2,163	2,239	2,359	2,391	2,422	2,451	2,479	2,507	2,534	2,560
Accommodation/Food Services	8,193	9,295	9,628	9,580	9,830	10,323	10,734	11,570	11,966	12,370	12,778	13,196	13,624	14,064	14,514
Government	13,414	14,075	14,437	14,669	14,860	15,032	15,034	17,980	15,487	16,001	16,524	17,054	17,591	18,136	18,688
Other Services	6,900	7,187	7,443	7,483	7,532	7,925	7,866	8,039	8,257	8,482	8,713	8,952	9,197	9,448	9,707

Sources: Woods & Poole 2015 State Profile

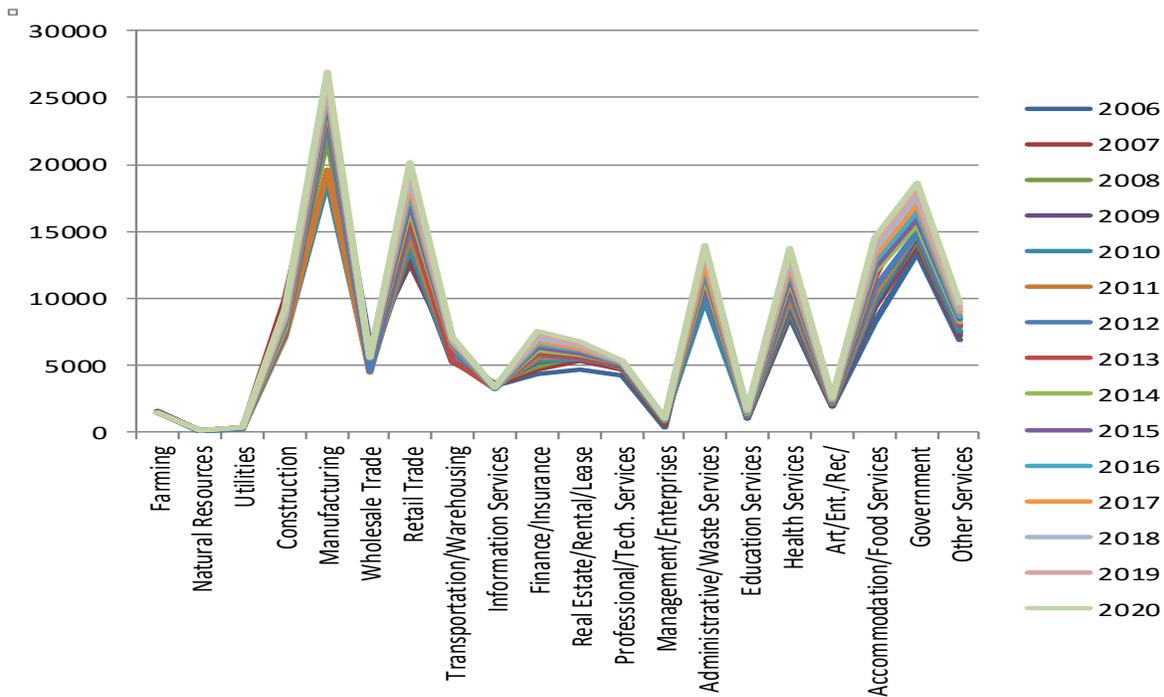
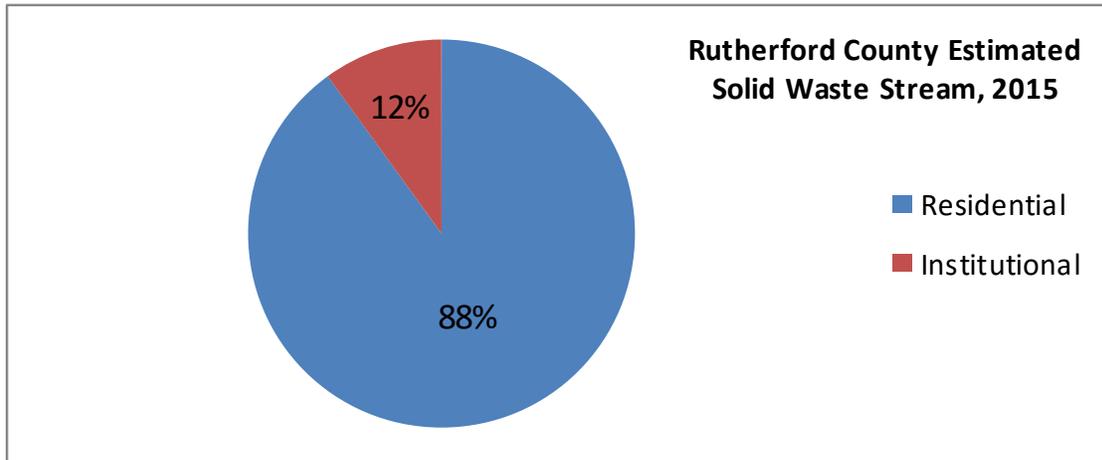


Chart 5 – Rutherford County Employment by Sector

**Item 3 - Characterization of the Solid Waste Stream**

*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.*



Rutherford County is well served in regard to solid waste disposal by the current system of convenience centers, city services, and private haulers. Rutherford County residents are served by the convenience centers located throughout the County or by private haulers. Rutherford County has experienced an average 3 percent increase in solid waste tonnage over the past 15 years, totaling a 45 percent increase in trash tonnage since 1999. As noted in the tables two and three, this significant increase in solid waste can easily be attributed to the population growth of Rutherford County. Currently, Middle Point Landfill, Cedar Ridge Landfill and the Smith County Landfill are where Rutherford County’s trash is disposed. Middle Point Landfill has an approximate life expectancy of only eleven years and five months. Cedar Ridge Landfill has a remaining life expectancy of three years and eight months. Smith County Landfill has a remaining life expectancy of four years and two months. These life expectancies are determined by the population growth and the increasing tonnage that is disposed of as a result. If there is a steady increase in trash tonnage per year over the next eleven years, Rutherford County will be looking for a trash disposal solution for approximately 104,000 tons. Rutherford County will also need to address the waste that will be refused by Cedar Ridge and Smith County Landfills upon closure in the next four years.

Rutherford County should not be in the mindset of landfilling being the first option of disposal; alternatives will need to be assessed and given consideration. A potential waste-to-energy solution may be in Rutherford County’s future. Rutherford County’s construction and demolition landfill has roughly four years of capacity remaining. If Rutherford County proceeds with its current plan in place, the County should explore options to utilize this waste for their benefit. There are numerous examples of utilizing waste for beneficial use, such as a waste-to-energy facility. Alongside recycling, waste-to-energy facilities can divert waste going to Class I and III/IV landfills, while providing a limited supply of energy.

As a potential way to reduce and divert waste, within the next ten years Rutherford County is planning to build a recycling facility to process cardboard, paper, plastic, glass and metals. Rutherford County is hoping this will be a public/private partnership in order to promote the diversion of wastes from landfills. This new facility will allow Rutherford County to offer curbside recycling service, there isn't currently a recycling facility close enough to the area to be economically feasible. A new recycling facility has been noted as a top priority project for Rutherford County, a second priority item would be the establishment of a solid waste authority. The authority would determine if, and when, each new facility would be constructed and what waste material they would be responsible for (General Recyclable Material, Tires, HHW, BOPAE, etc.). Currently, Rutherford County takes part in TDEC's annual HHW events to dispose of their HHW and BOPAE. This event provides residents with an outlet to dispose of any flammable, corrosive, reactive and/or toxic wastes. With the rise in Rutherford County population resulting in HHW increases, one HHW event will not be enough of an outlet for the County's residents to dispose of *all* of its residential HHW. To collect the growing amounts of HHW, Rutherford County will need to incorporate a HHW collection facility or to establish more HHW collection events throughout the year.

In March 2016, the City of Murfreesboro and Rutherford County sent out a request for proposal for a solid waste consulting firm to help plan out the way waste will be collected and disposed of when the Middle Point landfill closes. These options the consulting firm will be looking into include: landfilling, transfer station(s)/recycling center with all materials being collected, and waste-to-energy. This project is estimated to be completed in ten to twelve months from inception. Rutherford County is proactively seeking out alternative methods of waste disposal in efforts to have a feasible plan in place before the Middle Point Landfill closes within the next ten years.

**Item 4 - Solid Waste Collection System**

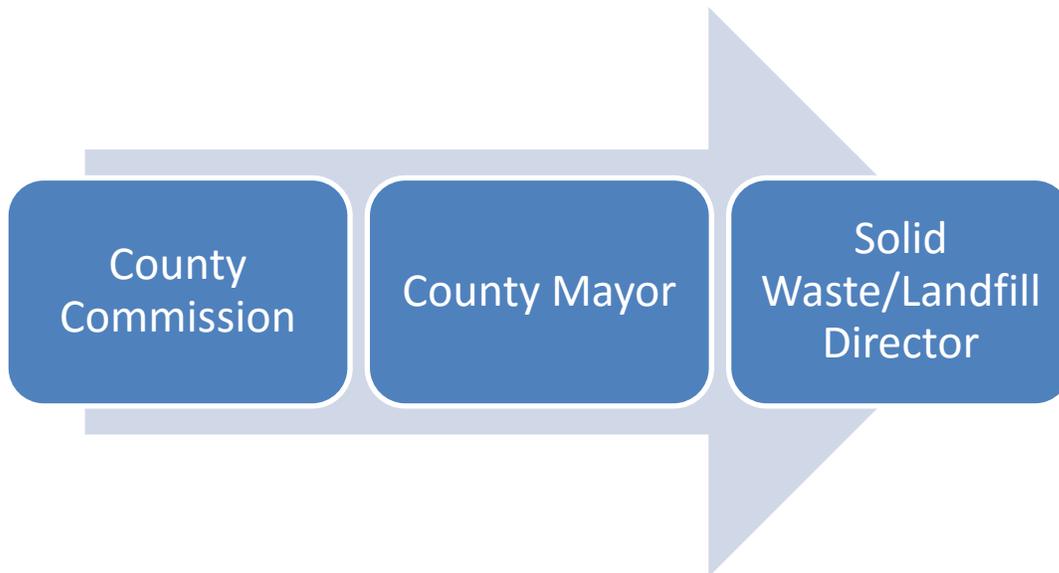
*Provide a detailed description of the waste collection system in the county and each municipality, including a narrative of the life cycle of solid waste from the moment it becomes waste (loses value) until it ceases to be a waste by becoming a useful product, residual landfill material or an emission to air or water. 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.*

The unincorporated portion of Rutherford County is served by sixteen convenience centers. The waste from these convenience centers is hauled with Roll-Off trucks and the trash is taken to Middle Point Landfill. Roll-Off recycle loads are taken to the nearest facility that processes that commodity. Seventy-five locations (schools and County buildings) are services by Front-End Loader trucks for trash and single-stream recycling. In this County only route, the trash is hauled to Middle Point Landfill and the single-stream recycling is hauled to All-in-One Recycling in Murfreesboro. The City of Eagleville also uses one of the County convenience centers. The City of Murfreesboro has city provided curb side service and maintains one convenience center. The cities of LaVergne and Smyrna do not provide service, their citizens contract directly with private haulers for curb side pickup. It should be noted that 51% of waste collected in Rutherford County comes from the northern half of the County, where LaVergne and Smyrna are located.

**Item 5 - Analysis of Existing or Potential Solid Waste Flows within the Region and Between Adjacent Regions**

*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 page-size, scaled county map indicating the location of all solid waste 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.*

Rutherford County operates with a fairly sizeable staff of 71 employees, 22 full-time and 49 part-time. The City of Murfreesboro operates with a staff of 36 employees funded through the general fund.



The City and County school systems receive free trash and recycle service and disposal. This service has been difficult to maintain as the schools are having a difficult time transitioning over to recycling. Through multiple waste audits at each school, the County has determined that the schools ranged from two students generating one cubic yard of solid waste each week to fifty students generating one cubic yard of solid waste. The level of service provided to each school will be based on the target number of students who generate one cubic yard of solid waste at each school. The schools seem to not be recycling as they should, therefore this target number will be increased each year to incentivize school systems to better monitor their trash disposal and increase their recycling.

Both of the landfills used in Rutherford County will reach capacity in less than ten years. The County is currently searching for alternative solutions. Efforts are being put in place to establish a solid waste authority that will determine the possible disposal solutions for all materials which the County manages. The authority will also establish the funding mechanism and possible partnerships required to implement the solution. Currently, the County needs a new solid waste facility for employees and trucking operations. The newly created solid waste authority would supervise the promulgation of this facility.



**Item 6 - Analyze Attitude of Region Toward Waste Management in General and Specify Needed Changes and/or Educational Measures**

*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.*

Rutherford County has a substantial education program that reaches large amounts of the population. Rutherford County produced "Stop the Splat," a film which explains how to dry latex paint prior to disposal. This film is aired on Rutherford County Television (RCTV) and the Murfreesboro City Cable channel. The film helped with the efficiency of the two oil-based paint collection events each year. Citizens exhibited a much clearer understanding of the paint disposal process, exemplifying that the education efforts are working. Alongside the paint disposal film, Rutherford County also produced a campaign, aired regularly on RCTV, detailing the proper disposal of computer monitors and televisions since the County now charges the disposal fee which the vendor charges the County. Rutherford County currently has an environmental education coordinator who goes into classrooms of each of the fifty-nine public schools to promote the County's single stream recycling program. This single stream program is progressively becoming more productive each year. Alongside the fifty-nine public schools, the environmental educator also presents the program to private schools when invited. The environmental coordinator also spends the summer months teaching at an environmental education outdoor classroom two to three days per week during the Farmers' Market hours when foot traffic is at a high level. Children and adults visit the classroom, free of charge, for environmental lessons that include a variety of environmental topics.

It has been identified by the County that the cost of operating a permanent Household and Hazardous Waste (HHW) facility for year round collection would be too high of a cost. Rutherford County would be better served by having four HHW events each year, one event sponsored by TDEC, the other three events would utilize the same TDEC contractor yet funded by the City and/or the County.

These strategies have been effective in reducing solid waste and increasing recycling participation. Alongside the increased participation, the implemented waste management and recycling strategies have demonstrated a positive response in the *quality* of recycling and waste management in the County. The overall outcome of these programs would be best suited to be measured over time, as receptiveness to new initiatives is not typically immediate. Moving forward, these strategies will play a key role in maintaining the current level of waste diversion and waste disposal in general.

Providing recycling bins in County school classrooms seem to be a very effective way to showcase the initial step of recycling. If the children are actively participating in recycling, as well as being taught by Rutherford County's Environmental Education Coordinator, then the students will have all of the tools necessary to teach others. The goal of teaching young students to recycle is for them to learn at an early age that they too can take part in recycling and ultimately teach others that they can as well.

Recycling bins in County buildings expose citizens that normally do not recycle to a new way of waste disposal. This gives citizens an opportunity to recycle at these locations and, if so inclined, take the idea home and begin recycling their household items. To aid in the education of recycling, it would be beneficial to have recycling information (how to's, FAQ's, etc.) in close proximity to indoor recycling bins.

In addition to the County Schools and Buildings, Table 8 lists all of the public convenience centers available to Rutherford County residents.

***Item 7 - Evaluation of the Waste Reduction Systems for Counties & Municipalities in Region***

*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.*

As seen in Table 6 below, Rutherford County met the 25% reduction rate for 2014, with a significant diversion rate of 50%, doubling the state minimum requirement of 25%. When assessing the waste diversion rate, it is important to notice that 90% of Rutherford County's municipal solid waste stream comes from residential developments and approximately 50% of the population is living in unincorporated portions of Rutherford County.

After looking over Table 6, it is easy to recognize that Rutherford County is doing a superb job of waste diversion, never dropping below 25% in the past ten years.

The amount of solid waste being disposed in Class I landfills has decreased by approximately five percent over the past ten years. The year 2015's disposal tonnages are omitted from this calculation due to still being verified by TDEC. In this ten year span between 2006 and 2015 Rutherford County reached an all-time low for Class I Landfill disposal in 2009. Rutherford County has two other all-time lows in 2009 with the lowest recycling and diversion tonnages as well as having the lowest amount of total generated solid waste. These numbers corresponding with the recession is probably not a coincidence. The recession affected the retail market in 2009, seen in Table 4, with another all-time low of retail sales slumping to \$3,011,142,000. This deficit in purchasing retail goods ultimately leads to a lack of waste disposal.

There does not seem to be any issues in waste diversion efforts in Rutherford County, but the numbers can always be higher. Having an Environmental Education Coordinator seems to have helped tremendously in 2015, the percent diverted has almost doubled previous years. Also, in 2015 over 42,000 tons of brush was converted into mulch, further offsetting the amount of waste hauled to landfills. This mulch is offered free of charge to Murfreesboro residents.

<b>Table 6: Real Time Diversion, Rutherford County</b>				
<b>Year</b>	<b>Disposed</b>	<b>Recycled/Diverted</b>	<b>Total Generated</b>	<b>Percent Diverted</b>
2006	333,122	137,864	470,986	29%
2007	305,925	208,247	514,172	41%
2008	278,512	167,459	445,971	38%
2009	201,526	163,333	364,859	45%
2010	191,884	103,183	295,067	35%
2011	200,089	165,459	365,548	45%
2012	193,099	189,571	382,670	50%
2013	284,985	201,610	486,595	41%
2014	317,491	318,520	636,011	50%
2015	77,343	329,534	406,877	81%

*Source: Rutherford County 2006- 2015 Annual Progress Report; TDEC Compliance Formulas APR Year 2014*

In 2014, Rutherford County set an all-time high for waste diversion with a total of 318,520 tons. In 2015, Rutherford County set *another* record high with 329,534 tons. 2015’s waste diversion rate doubled 2006, 2008 and 2010’s diversion rates and came close to doubling 2007, 2009, 2011 and 2013’s. Overall, comparing 2006 through 2015’s total waste generation, the total solid waste tonnage generated in Rutherford County fluctuates over the years but seems to be on a decreasing trend going forward.

**Item 8 - Collection/Disposal Capacity and Projected Life of Solid Waste Sites**

(a) 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>Table 7: Rutherford County Collection and Disposal Capacities</b>			
<b>Site Name(s)</b>	<b>Current Capacity</b>	<b>Maximum Capacity</b>	<b>Projected Life of Facility</b>
Northside (Middle Point) Class I Landfill	3,528 tons/day	“No Limit”	11 Years, 5 months
Rutherford County Class III Landfill	85 tons/day	----	4 years

*Source: TDEC 2016 Remaining Life Survey, Sanitary Landfills in Tennessee; Rutherford County Solid Waste Director*

Disposal for Rutherford County’s solid waste is located just outside of Murfreesboro in Rutherford County, seen in Map A on page 11. Recycling and convenience centers in Rutherford County are also shown in Map A, on page 11.

One inconsistency found between the TDEC 2016 Remaining Life Survey and the 2015 Rutherford County Annual Progress Report was the projected life of Middle Point Landfill. In the Annual Progress Report, it is stated that Middle Point Landfill has less than ten years remaining, with potentially less time depending on the daily tonnage received. Middle Point Landfill’s average growth rate of solid waste tonnage has been calculated at 3.03 percent per

year. This is significantly less time remaining than reported time in the *2016 Remaining Life Survey* which TDEC conducted.

<b>Table 8: Rutherford County Convenience Centers</b>		
<b>Facility Name</b>	<b>Location</b>	<b>Permit Number</b>
Almaville Convenience Center	7693 Almaville Road	CCC750000269
Brandyville Convenience Center	6615 Brandyville Pike	CCC750000271
City of Murfreesboro Convenience Center	648 West Main Street	CCC750000440
Cranor Road Convenience Center	1567 Cranor Road	CCC750000270
Eagleville Convenience Center	1109 Highway 41A South	CCC750000272
Epps Mill Road Convenience Center	6267 Epps Mill Road	CCC750000273
Fosterville Christiana Center	8101 Shelbyville Pike	CCC750000443
Lascassas Convenience Center	6883 Lascassas Pike	CCC750000274
Leanna Convenience Center	4303 Sulphur Springs Road	CCC750000275
Midland Convenience Center	4040 Rock Springs-Midland Road	CCC750000276
Rock Crusher Convenience Center	3895 Shelbyville Pike	CCC750000277
Rockvale Convenience Center	8923 Rockvale Road	CCC750000278
Sand Hill Road Convenience Center	140 Sand Hill Road	CCC750000279
Walter Hill Convenience Center	5362 Lebanon Pike	CCC750000280
Walter Hill Convenience Center	Jefferson Pike And Shady Lane	CCC750000489
Weakley Convenience Center	135 Weakley Lane	CCC750000281

<b>TABLE 9: RUTHERFORD COUNTY SERVICE AREA COVERAGE</b>					
<b>Provider of Service</b>	<b>Service Area</b>	<b>Population Total Under This Service</b>	<b>Frequency of Service (Weekly, Bi-weekly, on call, etc.)</b>	<b>Annual Tonnage Capacity</b>	<b>Type Service (Curbside, Convenience Center, Green Box)</b>
Rutherford County Solid Waste	City and County Schools	---	---	---	---
City of Murfreesboro	City of Murfreesboro Residents	---	---	---	Curbside Collection
Apprx.14 Private Companies	Countywide	---	---	---	Curbside Collection

*Source: Rutherford County Solid Waste Director*

**Item 9 - Unmet Financial Needs and Cost Summary**

*Provide a cost summary for current year expenditures and projected increased costs for unmet needs.*

The financial information in Table 10 is Rutherford County’s funding for calendar year 2015. The department is funded by sales tax, grants, sale of recyclable materials, landfill disposal fees, Middle Point host fee and solid waste fund balance. The finances provided during calendar year 2015 were sufficient for Rutherford County. Additional funding would allow for Rutherford County to increase its diversion rate, but there is no additional funding in the coming years.

**Item 10 - Compare Revenue Sources for the Region's Current Solid Waste Programs with Projected Future Demands. Identify Any Potential Shortfalls in that Capacity**

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 these needs will be met.

The Cities of LaVergne and Smyrna do not provide any waste collection or disposal services. The City of Eagleville uses a county convenience center. These cities do not provide a revenue source. The City of Murfreesboro receives its revenue to fund the Solid Waste Department from the General Fund, primarily from property taxes. Rutherford County receives the majority of its funding from local taxes, charges for its services, other local government and State revenues. Rutherford County's solid waste financial information is presented below in Table 10.

<b>TABLE 10: Rutherford County Solid Waste / Sanitation Fund Financial Needs and Cost Summary</b>				
			<b>Budgeted Amounts</b>	
<b>Revenues</b>			<i>Original</i>	<i>Final</i>
	Local Taxes		\$1,440,000.00	\$1,900,000.00
	Charges for Current Services		\$1,300,000.00	\$360,000.00
	Other Local Revenues		\$325,000.00	\$282,300.00
	State of Tennessee		\$339,100.00	\$400,288.00
	Other Governments and Citizens Groups		\$0.00	\$0.00
<b>Total Revenues</b>			\$3,404,100.00	\$3,942,588.00
<b>Expenditures</b>				
<b>Public Health and Welfare</b>				
	Sanitation Education/Information		\$151,345.00	\$153,225.00
	Convenience Centers		\$2,739,037.00	\$2,739,037.00
	Other Waste Collection		\$284,612.00	\$284,612.00
	Landfill Operation and Maintenance		\$956,609.00	\$956,729.00
	Postclosure Care Costs		\$310,000.00	\$310,000.00
<b>Other Operations</b>				
	Employee Benefits		\$30,025.00	\$28,025.00
	Miscellaneous		\$55,580.00	\$60,880.00
<b>Total Expenditures</b>			\$4,527,208.00	\$4,532,508.00
<b>Excess (Deficiency) of Revenues</b>				
	Over Expenditures ( <b>Unmet Need</b> )		\$1,123,108.00	\$589,920.00
<b>Net Change in Fund Balance</b>			\$1,123,108.00	\$589,920.00
Fund Balance, July 1, 2014			\$4,908,881.00	\$4,908,881.00
Fund Balance, June 30, 2015			\$3,785,773.00	\$4,318,961.00

Source: Comprehensive AFR, Rutherford County, Tennessee, for the year ended June 30, 2015. Tennessee Comptroller of the Treasury - Div

***Item 11 - Sustainable Goals Consistent with the State Plan***

*Discuss the region's plan for managing its solid waste system over the next five (5) years. Identify any deficiencies in that plan and offer recommendations for eliminating these deficiencies. Suggest and list the specific ways in which the region can improve its solid waste program to reach a level of waste reduction above that of the goal and provide long term sustainability to the current solid waste collection system. Show how the region's plan supports the statewide Solid Waste Management Plan.*

Rutherford County met the requirements necessary to comply with the Solid Waste Management Act of 1991 and will continue to do so. Rutherford County is on track to maintain its twenty-five percent diversion rate of municipal solid waste from Class I landfills for the next five years. Planning is under way to work out the necessary logistics once Middlepoint Landfill is closed. These could include landfill expansion, mandatory diversion of waste, or hauling waste to a different landfill. With Middlepoint Landfill closing in eleven years and five months, Rutherford County's five year plan will remain the same until further solid waste management plans present themselves. Rutherford County will continue to participate with the City of Murfreesboro in its very successful brush recycling program.

With Rutherford County's ever increasing population, necessary purchases will need to be made in the next five years in order to maintain the same level of service. Reaching out to the major industrial manufacturers in the County seems to have been a major success for 2015's diversion rate. This communication with industry manufacturers will need to be maintained for the next five years, hopefully increasing the diversion rate each sequential year.

## **Sources:**

- *Comprehensive Annual Financial Report, Rutherford County, Tennessee, for the year ended June 30, 2015. Tennessee Comptroller of the Treasury - Division of Local Government Audit. (<http://www.comptroller.tn.gov/repository/CA/2015/FY15RutherfordAFR.pdf>)*
- *Greater Nashville Regional Council Staff Calculations*
- *Rutherford County 2006- 2015 Annual Progress Report*
- *Rutherford County Solid Waste Director – Mac Nolen*
- *Tennessee Department of Environment and Conservation, 2016 Remaining Life Survey, Sanitary Landfills in Tennessee*
- *Tennessee Department of Environment and Conservation, Compliance Formulas APR Year 2014*
- *Tennessee Department of Labor and Workforce Development*
- *United States Census Bureau, 2010 Census Demographic Profile Data, Annual Estimates of Resident Population (2015)*
- *United States Census Bureau , Rutherford County 2010-2014 American Community Survey 5Year Estimates, ACS Demographic and Housing Estimates*
- *United States Census Bureau Population Division, Rutherford County 2013-2015 Population Estimates*
- *United States Department of Labor, Bureau of Labor Statistics, Data by County 2006-2015: (<http://www.bls.gov/law/#cntyaa>)*
- *University of Tennessee Center for Business and Economic Research Population Projections for Tennessee Counties and Municipalities 2000-2020*
- *University of Tennessee Center for Business and Economic Research, Census Population Projections 2010-2064*
- *Woods & Poole 2015 Tennessee State Profile*