

DICKSON COUNTY SOLID WASTE NEEDS ASSESSMENT

FY 2013



Prepared by:
Grant Green, Chief of Research

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

Demographic Information & Projections 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 (5) years.

Historic Population - Dickson County has experienced significant population growth in the past decade, with a continued trend expected in the next ten years. Between 2000 and 2010, Dickson County’s total population has grown from 43,156 to 49,666, a 15.08% growth rate.

Dickson County has six municipal governments, Burns, Charlotte, Dickson, Slayden, Van Leer, and White Bluff. See Table 1 and Charts 1 and 2 below for depictions of historic population change in both Dickson County and its cities.

Table 1: DICKSON COUNTY HISTORIC POPULATION 2003-2012										
	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
Burns	1,468	1,467	1,468	1,457	1,446	1,435	1,426	1,416	1,406	1,396
Charlotte	1,244	1,240	1,235	1,227	1,219	1,211	1,203	1,194	1,186	1,178
Dickson	14,858	14,775	14,538	14,308	14,079	13,850	13,621	13,392	13,163	12,934
Slayden	180	179	178	178	179	180	180	181	182	183
Van Leer	399	397	395	386	378	369	361	352	344	335
White Bluff	3,291	3,251	3,206	3,099	2,993	2,886	2,780	2,674	2,567	2,461
Remaining Dickson	28,941	28,785	28,646	28,360	28,070	27,782	27,491	27,202	26,912	26,622
DICKSON COUNTY TOTAL	50,381	50,094	49,666	49,015	48,364	47,713	47,062	46,411	45,760	45,109

Source: U.S. Census Bureau-2010\ACS, CBER Population Projections 2012, GNRC Linear Trend Analysis 2000-2010

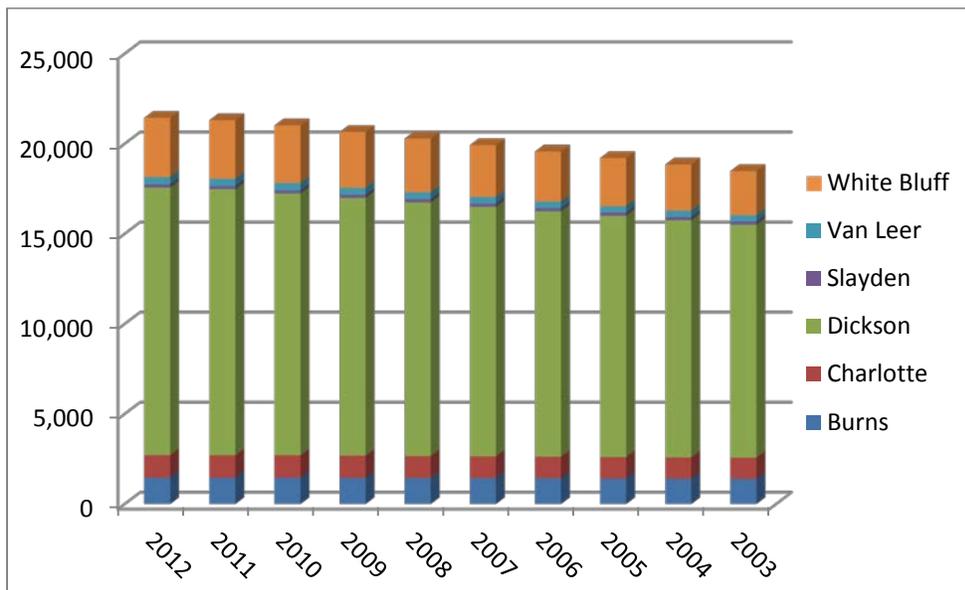


Chart 1-Dickson County Historic Population (Cities), 2003-2012

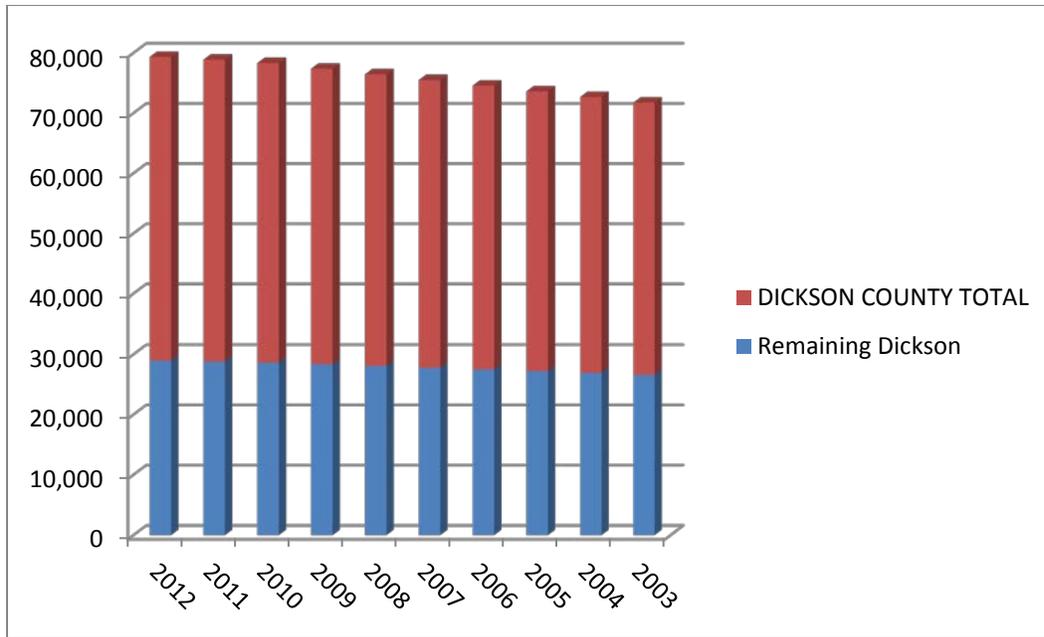


Chart 2-Dickson County Historic Population (County), 2003-2012

Population Projections - Population projections are estimates based on past trends, and do not always capture short-term influences on growth, such as the recent national economic downturn. Still, projections demonstrate trends, and the trend in Dickson County is for continued growth. To gain a sense of the range of that, growth projections from the University of Tennessee’s Center for Business and Economic Research (CBER) were utilized.

The University of Tennessee projections track slightly ahead of the locally-produced numbers for projected growth in 2015. For purposes of this report, the population projections from the **University of Tennessee** will be used. (see Table 2 and Charts 3 and 4 below).

Table 2: DICKSON COUNTY POPULATION PROJECTIONS						
	2013	2014	2015	2016	2017	2018
Burns	1,498	1,528	1,558	1,588	1,618	1,648
Charlotte	1,258	1,272	1,287	1,301	1,315	1,329
Dickson	14,966	15,074	15,182	15,290	15,398	15,506
Slayden	188	195	203	210	218	225
Van Leer	403	409	338	415	418	421
White Bluff	3,331	3,361	2,621	3,421	3,451	3,481
Remaining Dickson	29,388	29,844	30,492	31,180	31,218	31,677
DICKSON COUNTY TOTAL	51,032	51,683	51,681	52,985	53,636	54,287

Source: UT-CBER 2009, GNRC Linear Trend Analysis 2013-2018.

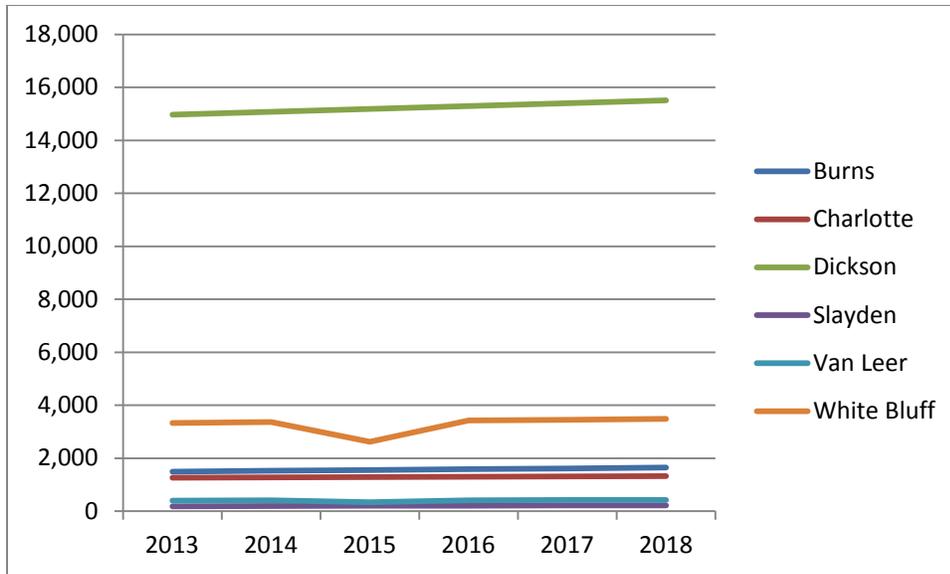


Chart 3-Dickson County Population Projections (Cities), 2013-2018

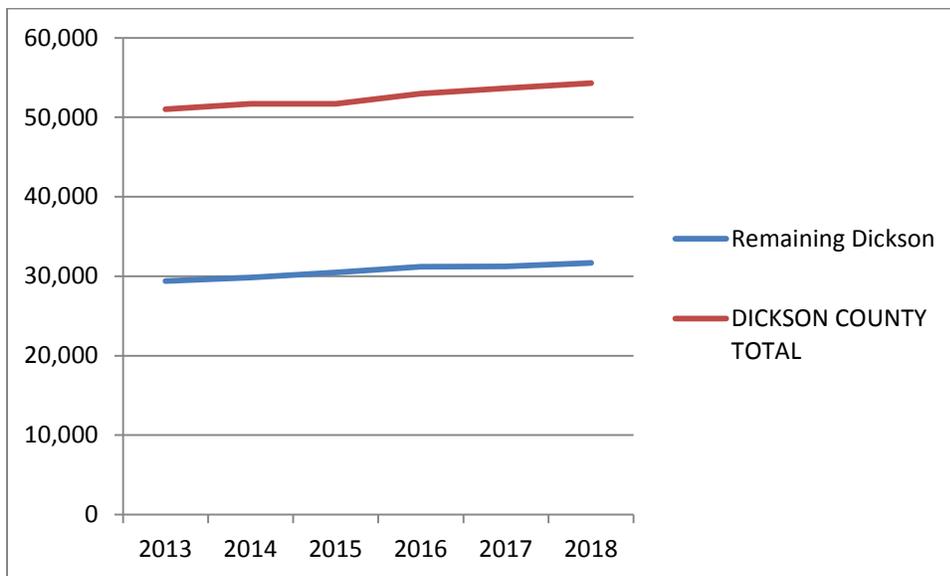


Chart 4-Dickson County Population Projections (County, 2013-2018)

The best use of these numbers for solid waste planning may be in their ability to project the number of **households** in future years. By dividing the projected population by the average household size (---, as of the 2010 Census), we can project the number of new households that could be added and will contribute to the waste stream. The number of potential new households in Dickson County is shown below in Table 3, using the University of Tennessee population projections to examine the most aggressive projections of new residential solid-waste generators.

Table 3

2010 U.S. Census Population Dickson County	2015 Projected Population	Population Increase 2010-2015	Average Household Size	Potential New Dickson County Households, 2015
49,666	51,681	2,015	2.6	775

While the recent recession has affected Dickson County, the number of new residential building permits in all of Dickson County has fluctuated from 2010 to 2012, from 94 in 2010, to 117 in 2011, then to 143 in 2012, signifying an increase from the economic downturn experienced at the end of the previous decade. The lull in building permit applications seems to indicate that the population projections may not materialize at the pace predicted. Even with the rebounding economy, the resulting credit policies may well impact the rate of new home construction, and could lead to a less-mobile population, thus flattening the population growth trends.

The implications for solid waste planning are to the potential waste stream volume, convenience center numbers and locations, and transportation costs. While Dickson County is predicted to have steady growth, the current rate of growth appears to have dropped further than future projections have indicated.

Analysis of 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 breakdown of each economic sector
- County or municipal budgeting information
- Other commonly accepted economic indicators

Table 4: DICKSON COUNTY SELECTED ECONOMIC DATA, HISTORIC AND PROJECTED 2001 - 2016

YEAR	LABOR FORCE	UNEMPLOYMENT	UNEMPLOYMENT RATE	PER CAPITA INCOME	PROPERTY TAX	RETAIL SALES
2001	22,000	1,100	5.0%	\$24,000	\$23,000,000	\$579,000,000
2002	22,130	1,090	4.9%	\$24,500	\$23,000,000	\$582,000,000
2003	22,420	1,140	5.1%	\$25,000	\$24,000,000	\$585,000,000
2004	22,640	1,190	5.2%	\$25,500	\$24,000,000	\$588,000,000
2005	22,960	1,140	5.0%	\$26,000	\$25,000,000	\$591,000,000
2006	23,450	1,090	4.6%	\$26,500	\$25,000,000	\$594,000,000
2007	23,260	990	4.3%	\$27,000	\$23,000,000	\$582,000,000
2008	23,600	1,640	6.9%	\$27,500	\$23,791,680	\$570,000,000
2009	23,380	2,590	11.1%	\$28,000	\$25,626,059	\$570,000,000
2010	24,390	2,380	9.8%	\$29,655	\$25,939,461	\$574,270,000
2011	25,100	2,400	9.6%	\$30,197	\$26,253,698	\$603,770,000
2012	23,090	2,040	8.1%	\$31,600	\$26,254,035	\$617,000,000
2013	24,000	1,900	7.9%	\$33,100	\$26,500,000	\$630,000,000
2014	24,500	1,750	7.1%	\$34,600	\$27,000,000	\$645,000,000
2015	25,000	1,700	6.8%	\$35,587	\$27,000,000	\$654,100,000
2016	25,200	1,700	6.7%	\$36,600	\$27,500,000	\$668,000,000

Sources: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S; TN Dept of Revenue, Dickson County Trustee, TACIR, [Woods & Poole 2012 State Profile](#) ,[GNRC Estimates](#)

Dickson County has a fairly stable labor market, having multiple industries and gaining a positive economic impact from its close proximity to Davidson County. Property tax collections have dipped throughout the economic downturn, and retail sales, which generate sales taxes, have also suffered, but however appear to be on the rebound.

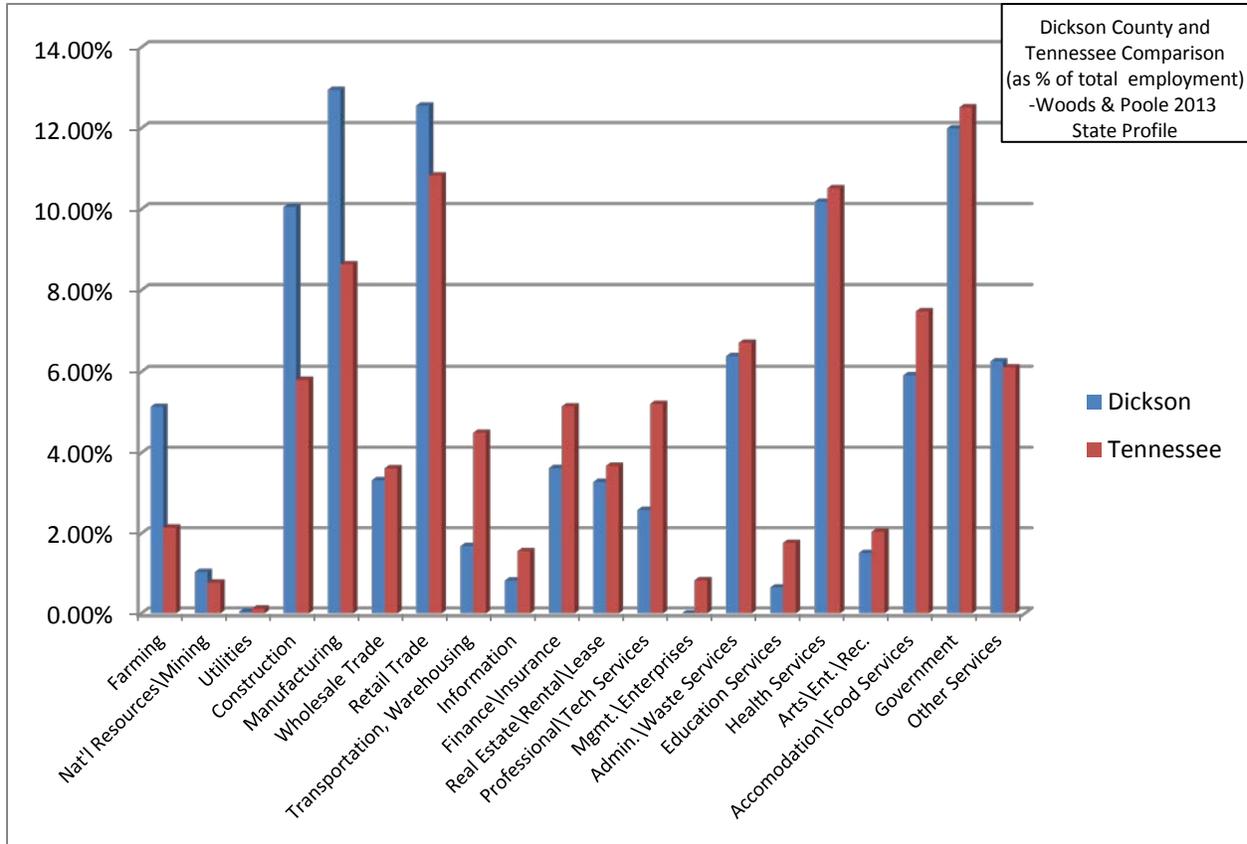
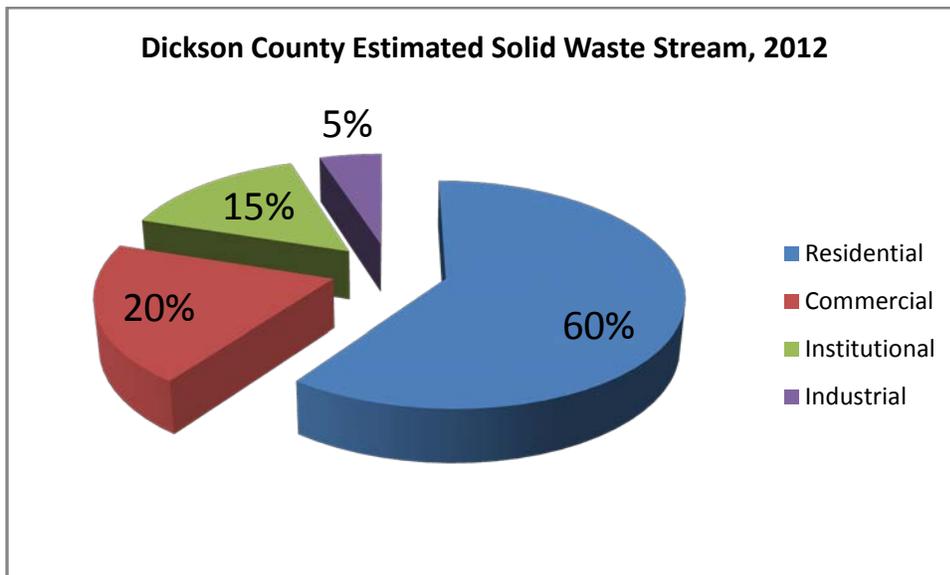


Chart 2 – Dickson County Employment vs. State of Tennessee

Source: Woods & Poole, 2013 TN State Profile

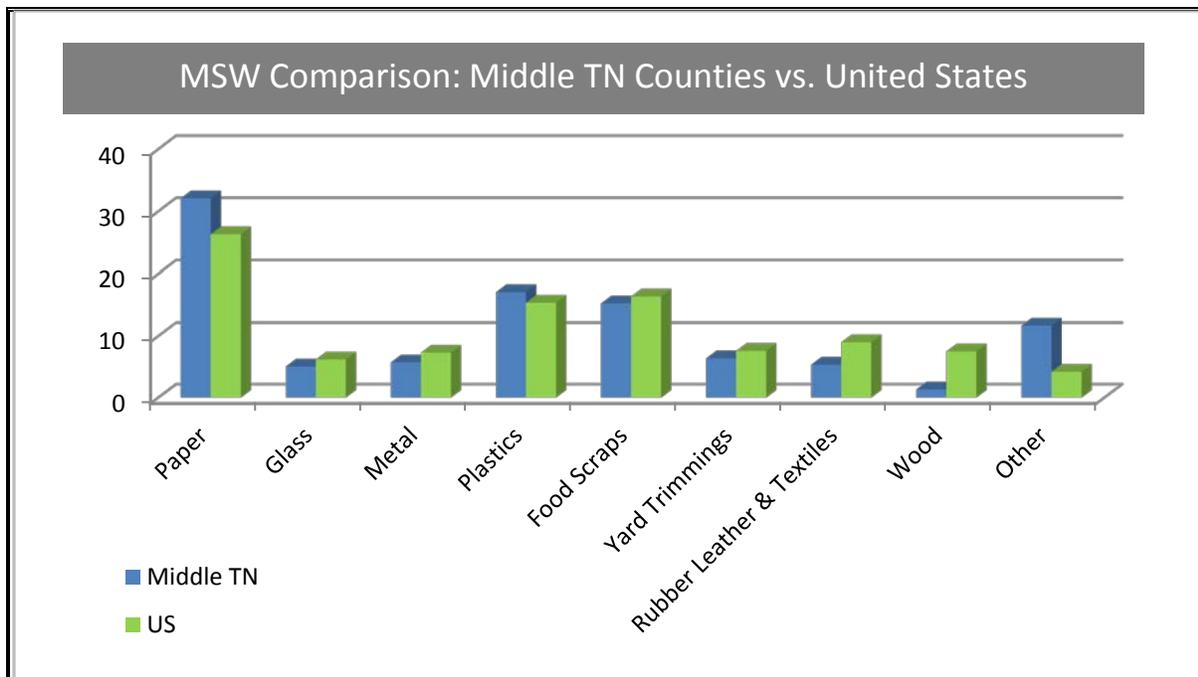
Dickson County’s sector employment does not follow State of Tennessee trends, as shown above from the *Woods & Poole, 2013 TN State Profile*. Dickson County far surpasses the State averages for employment in manufacturing, farming, and construction. The finance and education categories also significantly below state averages. The State of Tennessee Department of Labor and Workforce Development includes Dickson County in its Labor and Workforce Investment Area (LWIA) #8 (which also includes Cheatham, Houston, Humphreys, Montgomery, Robertson, Stewart, Sumner, and Williamson Counties), and in its *Job Forecast News, Hot Jobs to 2018* Report, predicts that the High-Growth industries for this LWIA will be **Professional, Scientific, and Technical Services, Educational Services, Food Services and Drinking Places, Ambulatory Health Care Services, and Administrative and Support Services.**

Characterization of the Solid Waste Stream Elaborate on the entire region's solid waste stream. Compare today's waste stream with anticipated waste stream over the next five (5) years. How will the total waste stream be handled in the next five (5) years? 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 or industrial wastes are managed. Also provide an analysis noting source and amounts of any wastes entering or leaving out of the region.



Generally, as of 2012's *Annual Progress Report (APR)*, Dickson County's waste stream is primarily residential waste (60%), comprising the majority of the total. Commercial waste (20%) and institutional waste (15%) share a nearly equal share of the stream. Industrial waste was reported to comprise the remaining 5% of Dickson County's waste in their 2012 APR. This is a typical breakdown for most counties.

The specific composition of the waste stream specific to Dickson County has not been measured, however, 1998 estimates provided from the County's 5 year update showed 76.2% was comprised of general waste, such as household garbage, 12.3% was construction/demolition waste, 7.24% was recyclables, 4.0% was yard waste, 0.12% tires, and 0.12% white goods. A report prepared in 2008 by Tennessee State University for the TN Department of Environment and Conservation conducted a municipal solid waste characterization study of waste being handled at two facilities in Tennessee: Cedar Ridge Landfill in Lewisburg (Marshall County), and Bi-County Landfill in Montgomery County. Samples were taken and weighed, and results categorized. The report, ***2008 Tennessee Waste Characterization Study***, noted that the 2 Middle Tennessee landfills surveyed had statistically significant differences in waste stream composition than the United States at large. As shown below, the 2 studied landfills had larger percentages of paper and plastics, but smaller percentages of food scraps, rubber, leather, textiles, and wood. All county waste streams will vary dependant on the mix of residential and commercial contributors, as well as the level of recycling efforts, however, the results of the TDEC/TSU study can be points of comparison for future measurement specific to Dickson County.



Dickson County successfully handles problem wastes, such as batteries, oil, tires, paint, e-waste and freon through its recycling program. To assist with diversion efforts, and to help reduce the amount of recyclables going to the landfill, Dickson County has several projects, both ongoing and planned:

- Litter Grant – Utilizing a grant, the County aims at preventing litter by providing trash bags for citizens' vehicles.
- Earth Day\Recycling Program – Educational materials are provided to schoolchildren through an annual recycling campaign.
- Recycling Public Awareness Campaign – A public outreach campaign is conducted to educate the public on the benefits of recycling.
- Dickson County Leadership Composting Project – Compost Bin Distribution. Compost bins are provided for Leadership Dickson County to distribute for a community outreach campaign.

Future efforts planned by Dickson County include:

-The addition of a recycling building for processing, two school buses for recyclable transport, and two flatbed trailers to take recyclables to the markets.

-Expansion of the Burns, Pond, and White Bluff Convenience Centers

-Expansion of mixed paper and cardboard recycling to Dickson County Schools and local governments.

-Continuing recycling education of Girl Scouts and begin program Boy Scouts.

-Implementation or joining of a hub and spoke system for recyclable collection.

Solid Waste Collection System Describe in detail the waste collection system of the region and every county and municipality. Provide 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.

Dickson County serves the unincorporated portion of the County through a system of ten convenience /recycling centers, a transfer station, and a central facility for handling recyclables.

City of Dickson provides curbside service for about 20,000 citizens.

City of Burns does not provide any solid waste services. Some of the residents have contracts with private haulers but most use County Convenience Centers.

City of Charlotte contracts with a private hauler to serve its population of some 1,600.

City of Slayden does not provide any solid waste services. Some of the residents have contracts with private haulers, but most use County Convenience Centers.

City of Vanleer does not provide any solid waste services. Some of the residents have contracts with private haulers, but most use County Convenience Centers.

City of White Bluff contracts directly with a private hauler to provide all service to the entire population of 3,000.

The county handles all solid waste activities for both incorporated and non-incorporated areas. The existing solid waste management system, including all cities and the County, appears to be functioning well at this time. Due to the size of the county, it may need a few more convenience centers in unincorporated areas that are experiencing the most growth, but the number available far exceeds the average, and appears to provide great service to the county's residents. The cities all have above average to adequate collection systems that will likely need to be expanded beyond the five year period being reviewed.

The county wishes to expand their existing recycling, and is very proactive in these efforts. Dickson County currently collects batteries, oil, paint, antifreeze and electronics at the Dickson County transfer station. Dickson County also has numerous commercial businesses that accept waste oil. Batteries are marketed to local recycling center, oil is collected and marketed to waste oil collection company. Antifreeze is collected at the transfer station and Dickson County maintains a contract for disposal. Electronics are currently collected and red recycled by Creative Recycling.

Dickson County maintains a fleet of trucks to transport waste from sites to Dickson County transfer station. Dickson County maintains a contract with West Camden Sanitary Landfill where all waste is transported. In 2012, a large majority of all waste collected by the county (36,016 Class I tons) went to West Camden Sanitary Landfill, located in Camden, TN. Two other destinations with relatively small tonnage were Middlepoint Landfill and Bi-County Snl Balefill, likely received from independent haulers.

Waste Reduction The Solid Waste Management Act of 1991 states that all regions must 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 reduction rate by each goal calculation methodology. Discuss how the region made the goal by each methodology or why they did not. If the Region did not meet the 25% waste reduction goal, what steps or infrastructure improvements should be taken to attain the goal and to sustain this goal into the future.

Base Year Diversion, Dickson County

Year	Tons Disposed	Population	Tons Per Capita
1995	29,501	38,740	0.77
2007	52,106	52,529	0.99
2012	40,324	50,381	0.80

The per capita diversion rate shows a 9.9% increase between 1995 and 2012. However, the 2012 number is a decrease of 19.19% from 2007, where tons per capita equaled 0.99. Also, in 1995, the volume of waste disposed was potentially inaccurate due to possible overestimation or underestimation, however, the impact of diversion efforts since should not be discounted. Recent numbers are more reliable, and show that the County has maintained a diversion rate over the last five years toward the 25% reduction goal.

Real Time Diversion, Dickson County

	Tons Disposed	Waste Diverted	Total Waste	% Diverted
2007	48,704	36,151	84,855	42.6
2008	47,201	58,411	105,612	55.3
2009	42,313	57,226	99,539	57.5
2010	48,589	32,491	81,080	40.1
2011	38,082	89,925	128,009	70.2
2012	40,324	62,673	102,997	60.8

The county has significantly reduced waste disposed and increased diverted waste during this timeframe, and has exceeded 25% reduction each of the last five years.

Collection/Disposal Capacity and Projected Life of Solid Waste Sites 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.

Site Name(s)	Current Capacity	Maximum Capacity	Project Life of Facility
Middle Point Landfill	4,000	5,500	12
West Camden Sanitary Landfill	2,500	3,500	21
Bi-County Snl Balefill	655	900	98
Dickson Class III/V Landfill	n/a	n/a	n/a

Evaluation of the Waste Reduction Systems for Counties & Municipalities in Region Provide a chart of other graphical representation showing public and private collection service provider area coverage 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.

Provider of Service	Service Area	Population Total Under This Service	Frequency of Service (Weekly, Bi-weekly, on call, etc.)	Tonnage Capacity	Type Service (Curbside, Convenience Center, Green Box)
Dickson County, Slayden, Vanleer	Rural/Village	29,520	5 days/wk	*192 tons/wk	Conv. Centers
Charlotte	Incorporated	1,244	1 wk	2 tons/wk	Curbside
Dickson City	Incorporated	14,858	1 wk	112 tons/wk	Curbside
White Bluff	Incorporated	3,291	1 wk	4 tons/wk	Curbside
Burns	Incorporated	1,468	5 days/wk	35 tons/wk	Conv. Centers

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

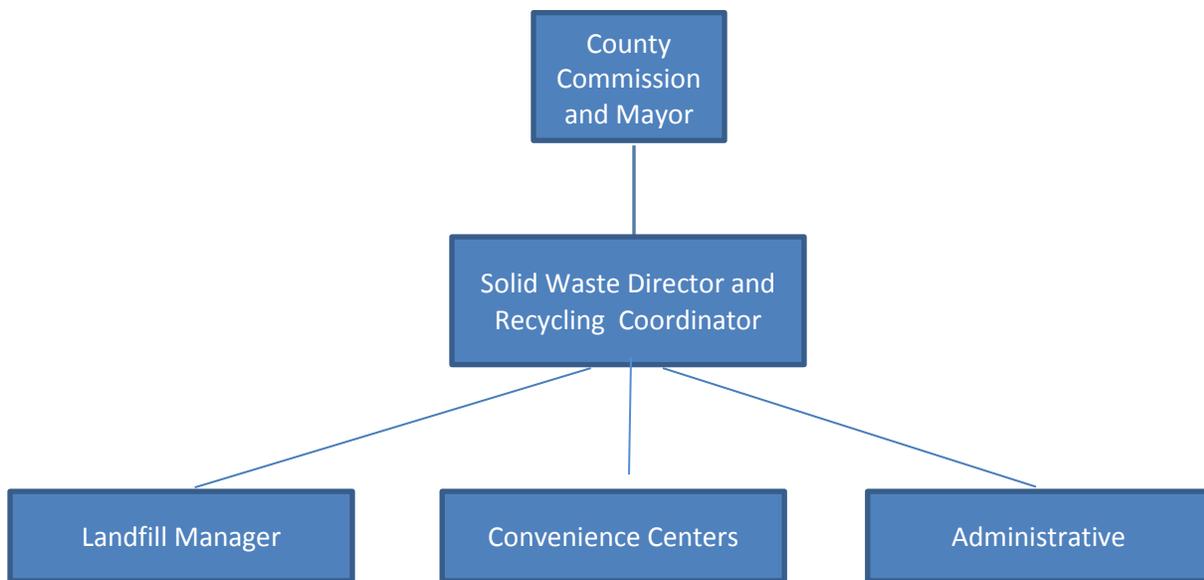
EXPENDITURES			
Description	Present Need \$/year (2012 APR)	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year**
Salary and Benefits		\$90,000*	\$90,000
Waste Pickup	2,930,000		2,930,000
Collection and Disposal Systems			
Equipment		\$350,000	\$350,000
Sites			
Convenience Center		\$400,000	\$400,000
Transfer Station			
Recycling Center		\$100,000	\$100,000
Problem Waste Ctr.			
Compost Center			
Other Collection			
Landfills			
Site			
Operation		\$100,000*	\$100,000
Closure			
Post Closure Care	171,500		171,500
Other Waste Disposal			
Administration (supplies, communication costs, etc.)			
Education			
Public			
Continuing Ed.			
Capital Projects	30,000	\$150,000	\$180,000
REVENUE			
Host agreement fee			
Tipping fees	1,000,000		
Property taxes			
Sales tax			
Surcharges			
Disposal Fees	2,239,000		
Collection charges			
Industrial or commercial charges			
Residential charges			
Convenience Center charges			
Transfer Station charges			
Sale of Methane Gas			
Sale of Recycled Materials	50,000		
Solid Waste Grants	40,000		
Other Governments and			

Citizens Groups			
Other sources: (Grants, bonds, interest, sales, etc.)			
Transfer from General Fund			

*Running Annual Cost

**Some Unmet Needs are One Time Purchases

Organization & Facility Locations 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.



The City of Dickson’s structure starts with the Mayor and Council, to the City Administrator, to the Public Works Director, who oversees the truck drivers and laborers on staff.

The cities of White Bluff and Charlotte contract with a private hauler.

Burns, Slayden, and Vanleer do not offer solid waste services of any kind.

Revenue Sources/Needs 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 example in Chart 7 as an example to present data.

The primary source of revenue was from the General Fund (likely from county property tax), followed by surcharges, sale of recycled materials, and solid waste grants. The solid waste program relies heavily on the General Fund and TDEC grants. Dickson remains moderate to conservative in its approach for funding new items, however, the increase in property taxes may bring about more funding, which could result in higher efficiency for the department, as well as better services for the residents. These items would need to be addressed in the future to make the solid waste program more effective. In addition, fuel remains a highly volatile budgetary issue, particularly at the scale it affects Dickson at, given the county size and number of facilities.

Dickson County offers many services to its residents, but solid waste service, while likely considered above average, could potentially be improved for the citizens. The main item of note involves availability of recycling options and upgrading the operations with facilities and staff. The county has plans to increase these when funds are made available.

Recycling 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 on-going 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?

Dickson County has an effective recycling program, and continues to take steps forward in reducing recyclable material sent to landfills. The County has made significant strides over the last 10 years to increase diversion efforts. The increased educational component will assist in modifying the public's behavior over time, and eventually attitudes will follow once it becomes the standard. Many education efforts are conducted with Dickson County students. Recycling, composting, and littering are main topics covered by these numerous programs.

The overall effects of these programs should be measured over time, as receptiveness to new initiatives is not typically immediate. It is thought that the various methods to educate the public has and will help modify the behavior of the citizens to make more environmentally conscious decisions. More visible options for recycling, as well as changes in policies and mandates, place those opportunities to the forefront.

Sustainability 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 (5) years. Show how the region's plan supports the Statewide Solid Waste Management Plan.

No major changes are expected in the Region's Five Year Plan. Dickson County's government reviews needs that are planned, along with other budgetary items. The County will continue its current education programs on appropriate waste reduction, management, and disposal. Education encourages positive waste management habits by the public, and provides them knowledge of the available options.

The efforts put forth by Dickson support the Statewide Solid Waste Management Plan. Waste reduction and diversion is a common goal that their Solid Waste program intends to continually improve on. This is dependent on subsidies from the County budget and TDEC grants to carry on existing activities, as well as add new initiatives.