

HUMPRHEYS COUNTY SOLID WASTE NEEDS ASSESSMENT

FY 2013



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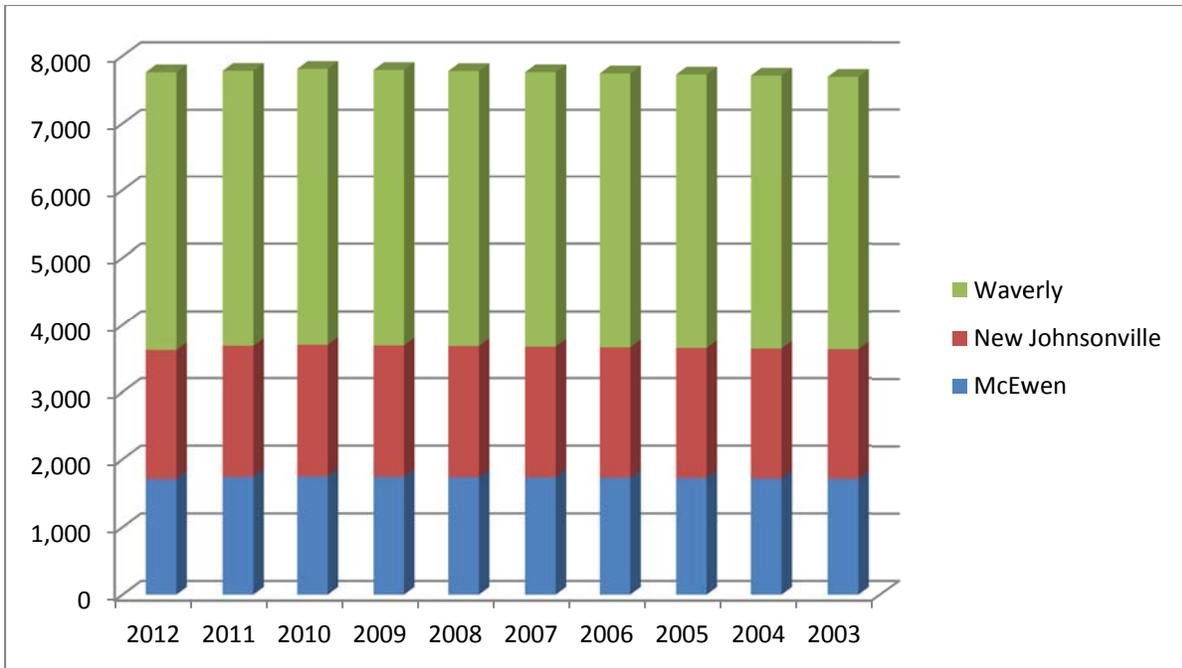


Chart 1-Humphreys County Historic Population (Cities), 2003-2012

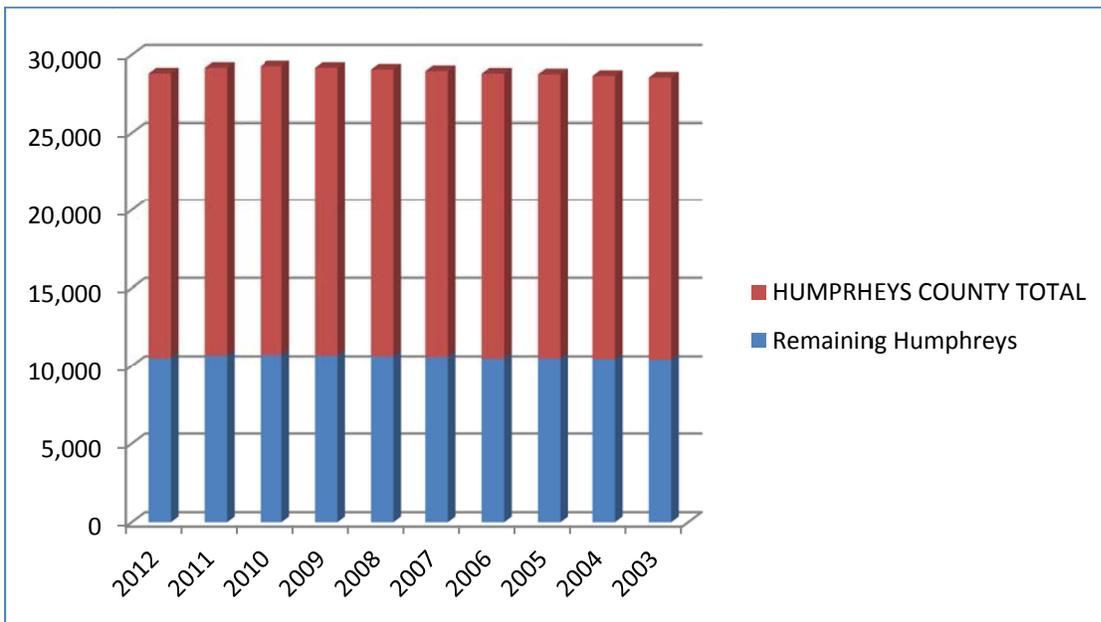


Chart 2-Humphreys County Historic Population (County), 2003-2012

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 Humphreys County is for growth to decline. 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 lower than the Census numbers for projected growth. For purposes of this report, a combination of the population projections will be used. (see Table 2 and Charts 3 and 4 below).

Table 2: DICKSON COUNTY POPULATION PROJECTIONS						
	2013	2014	2015	2016	2017	2018
McEwen	1,697	1,684	1,663	1,650	1,637	1,624
New Johnsonville	1,902	1,890	1,954	1,866	1,854	1,842
Waverly	4,139	4,147	3,981	4,165	4,173	4,181
Remaining Humphreys	10,449	10,378	10,278	10,107	10,036	9,965
HUMPHREYS COUNTY TOTAL	18,187	18,099	17,876	17,788	17,700	17,612

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

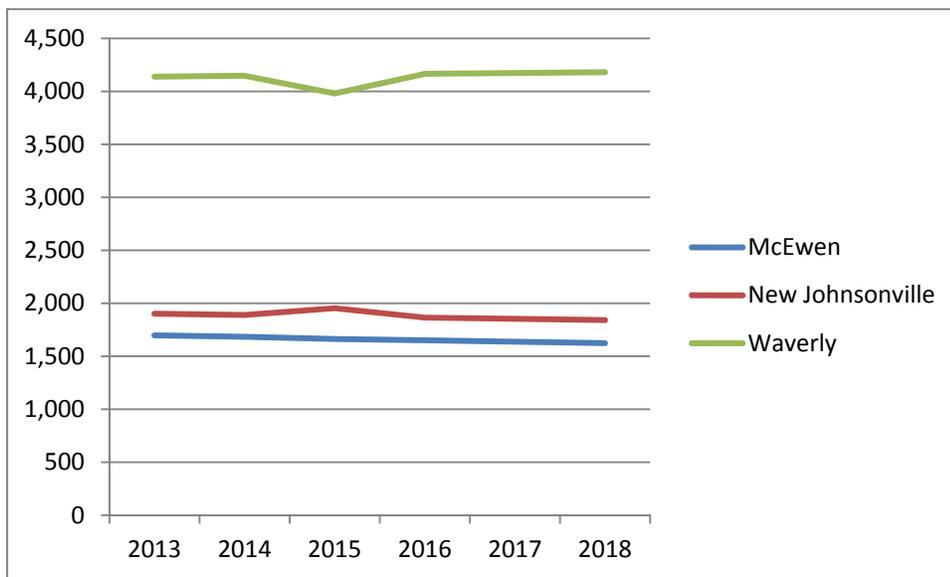


Chart 3-Humphreys County Population Projections (Cities), 2013-2018

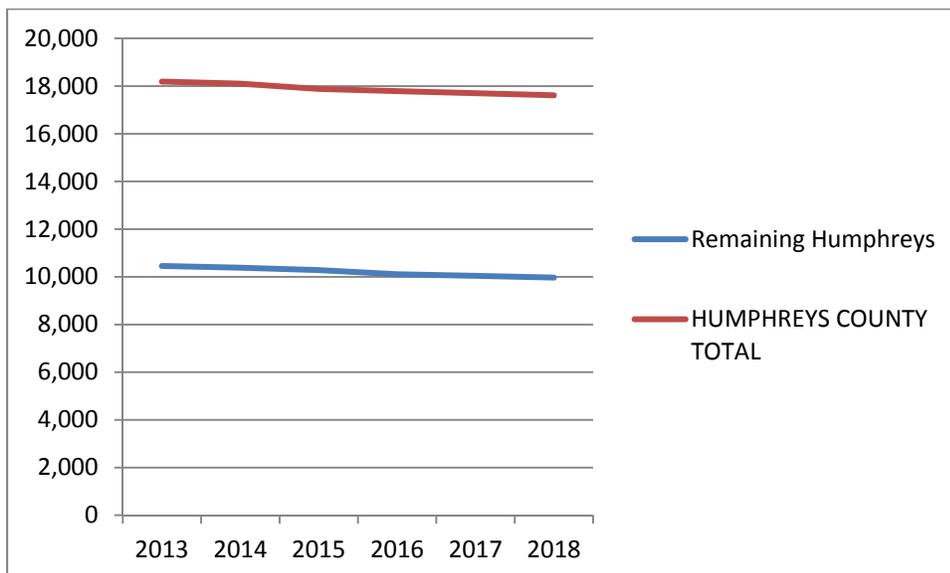


Chart 4-Humphreys County Population Projections (County, 2013-2018)

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 (2.46, 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 Humphreys County	2015 Projected Population	Population Decrease 2010-2015	Average Household Size	Potential New Humphreys County Households, 2015
18,538	17,876	-662	2.46	Minimal

According to Richie Blue, speaking on behalf of the County, residential building permits are not required outside municipal areas of the County, so tracking growth is difficult with no permitting process in place.

The implications for solid waste planning are to the potential waste stream volume, convenience center numbers and locations, and transportation costs. While Humphreys County has had slow, steady growth, future projections indicate a decline, so new households adding more volume will be minimal.

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: HUMPHREYS COUNTY SELECTED ECONOMIC DATA, HISTORIC AND PROJECTED 2001 - 2016						
YEAR	LABOR FORCE	UNEMPLOYMENT	UNEMPLOYMENT RATE	PER CAPITA INCOME	PROPERTY TAX	RETAIL SALES
2001	8,750	525	6.5%	\$24,000	\$5,800,000	\$145,200,000
2002	8,800	590	6.7%	\$24,500	\$6,000,000	\$147,700,000
2003	8,870	600	6.8%	\$25,000	\$6,200,000	\$150,200,000
2004	8,850	640	7.2%	\$25,500	\$6,400,000	\$152,700,000
2005	8,940	690	7.7%	\$26,000	\$6,400,000	\$155,200,000
2006	9,030	570	6.3%	\$26,500	\$6,200,000	\$157,700,000
2007	9,140	520	5.7%	\$27,000	\$6,000,000	\$159,200,000
2008	9,030	770	8.5%	\$27,500	\$6,253,657	\$159,200,000
2009	8,980	1,150	12.8%	\$28,000	\$6,340,801	\$162,000,000
2010	9,270	1,010	10.9%	\$27,502	\$6,458,063	\$166,860,000
2011	9,370	960	10.3%	\$27,907	\$7,731,920	\$173,120,000
2012	9,190	850	9.3%	\$28,200	\$7,969,138	\$176,500,000
2013	9,200	850	9.2%	\$28,600	\$8,200,000	\$180,000,000
2014	9,300	840	9.0%	\$28,900	\$8,500,000	\$183,000,000
2015	9,300	820	8.8%	\$29,082	\$8,800,000	\$185,240,000
2016	9,400	830	8.8%	\$29,300	\$9,000,000	\$188,000,000

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

Humphreys County has suffered from recent job losses and the economic recession, but appears to be rebounding to a degree. Property tax collections have dipped throughout the economic downturn, but have increased tremendously in the last few years. Retail sales also slowed, but are increasing considerably with the recovering economy.

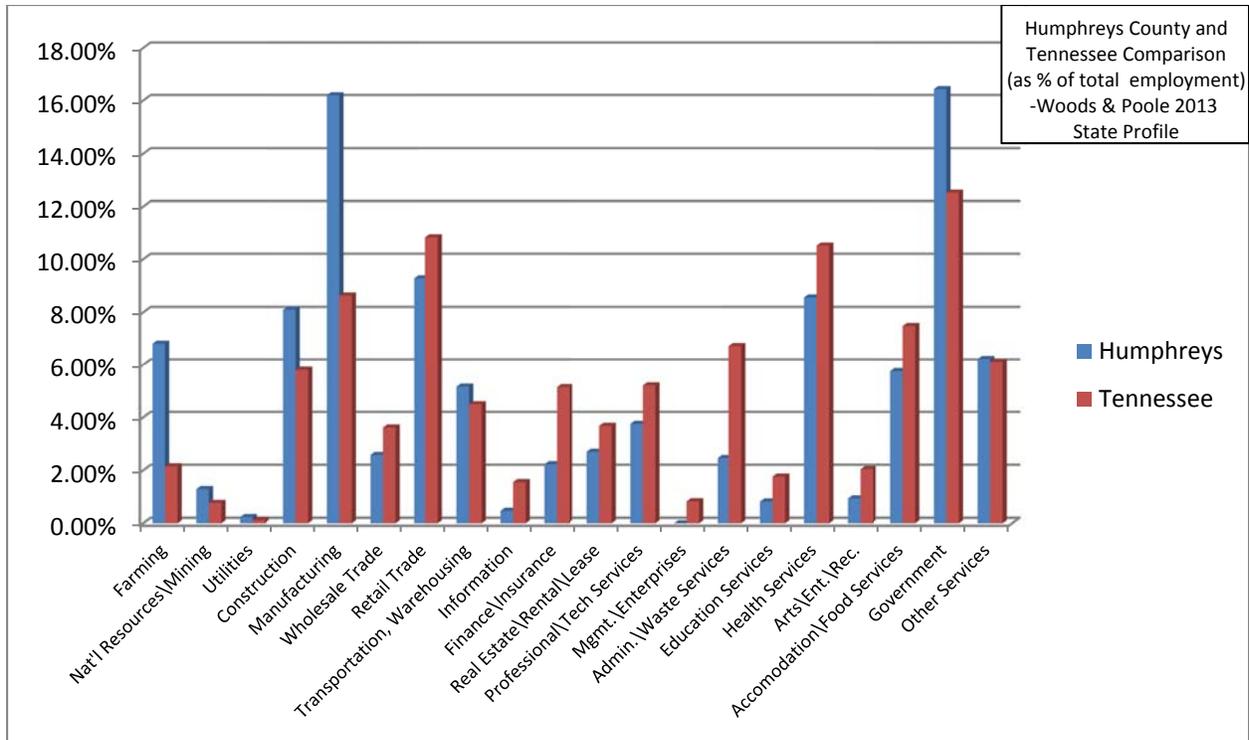
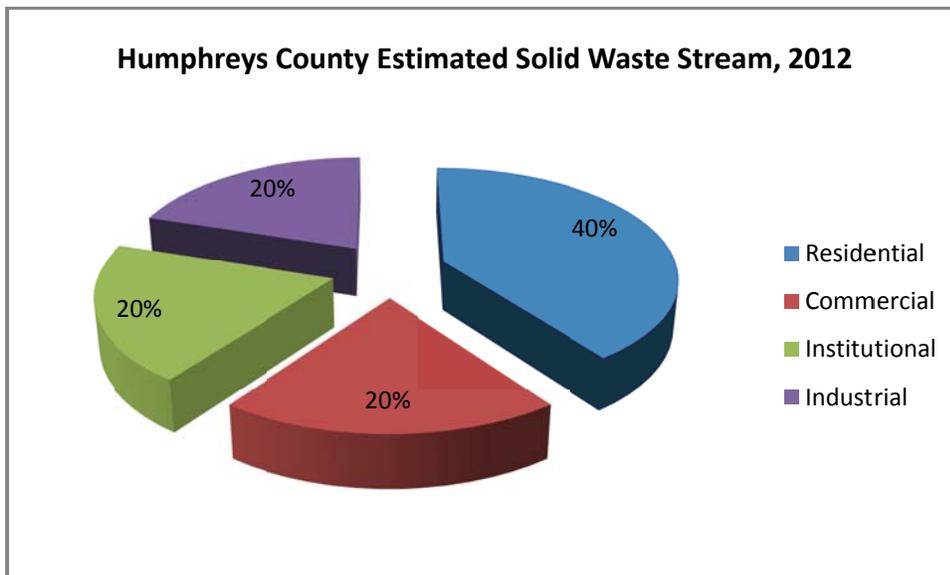


Chart 2 - Census of Employment 2010

Source: Woods & Poole, 2013 TN State Profile

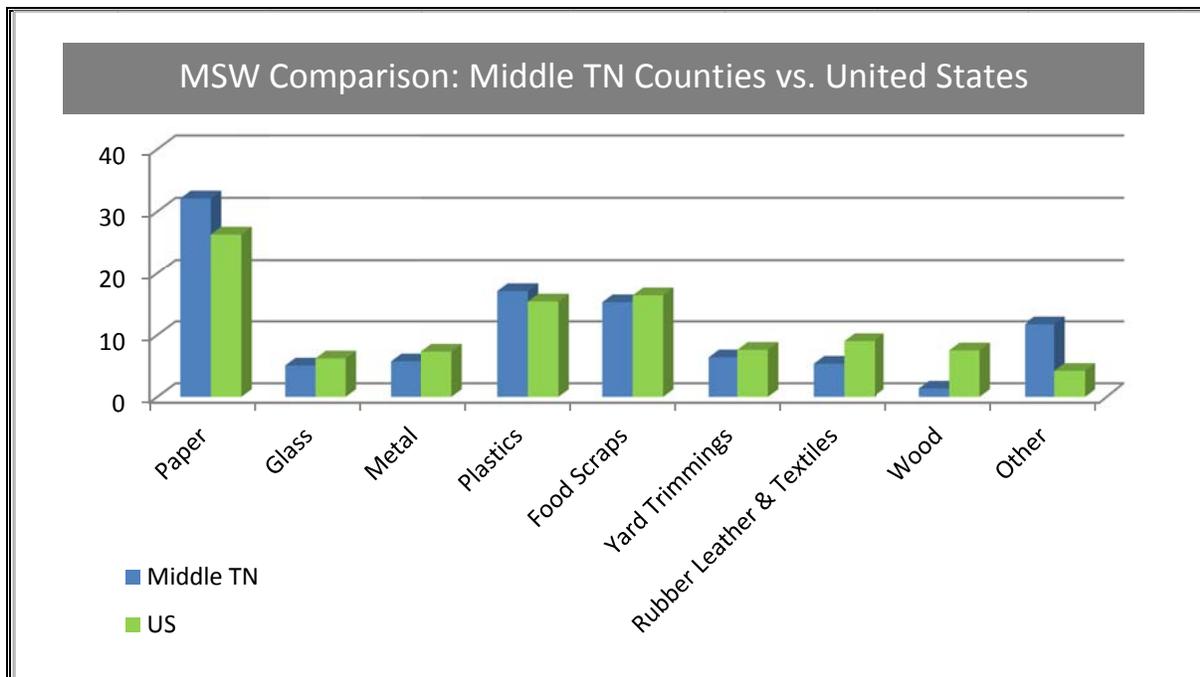
Humphreys County's sector employment does not follow State of Tennessee trends, as shown above from the *Woods & Poole, 2013 TN State Profile*. Humphreys County far surpasses the State averages for employment in government and manufacturing. The farming and construction categories also are above state 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, Dickson, Houston, 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)*, Humphreys’ County’s waste stream was generally estimated as residential waste (40%) comprising the majority of the total. Commercial, industrial, and institutional waste (20%) share a nearly equal share of the remainder. This would appear to be a very general estimate that reflects that business and industry contribute considerably to the total.

The specific composition of the waste stream specific to Humphreys 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 Humphreys County.



Humphreys County successfully handles problem wastes, such as auto fluids, oil, tires, and demolition waste through its recycling program. White goods are now being picked up by a private contractor. While the success of the local recycling program is not evident in the amount of waste diverted from the waste stream comparing the five-year interval of 2007 to 2011 (33,715.9 tons in 2007, 19,314 tons in 2011), 2011 was an exceptionally low year for tons disposed, and the diversion rate remained on pace as previous years (67.3).

Unfortunately, very little money or staffing is available for educational efforts. The one employee given this task goes to the schools, county events, and has been on the local radio station for public outreach and education, and seems to be doing well.

To assist with diversion efforts, and to help reduce the amount of recyclables going to the landfill, Humphreys County has several projects, both ongoing and planned (dependent on funding):

- The purchase of roll off trucks, compactors, receiver boxes, and open top roll off bins to assist the recycling program and at the convenience centers.
- Letters from the County Executive intended to encourage businesses to cooperate with recycling efforts.
- Addition of bulk paper shredding to the newspaper recycling program.
- Find buyer for tin cans, which are currently being sent to a landfill.
- Household hazardous waste collection events.

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.

Humphreys County operates six convenience centers, which makes service convenient for residents. Recycling bins are available for materials collected at each site. Curbside recycling is available for residents with paper and plastic. In addition, the City of Waverly offers public pick up for city residents. Recyclables are taken to the James Developmental Center, located in Waverly, for separation prior to being taken to market.

In 2011, a large majority of all waste collected by the county (7,506 tons) went to West Camden Sanitary Landfill, located in Camden, TN. Two other major destinations were Humphreys County Class III Landfill (2,378 tons), and Bi-County Sml Balefill (1,558 tons) in Montgomery County.

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, Humphreys County

Year	Tons Disposed	Population	Tons Per Capita
1995	21,269	16,417	1.3
2000	17,552.0	17,929	0.98
2011	9,374.8	18,470	0.51

The per capita diversion rate shows a 32.97% decrease between 1995 and 2011, meeting the goal of 25%. However, in 1995 the volume of waste disposed was potentially inaccurate due to possible overestimation, 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 that exceeds the 25% reduction goal.

Real Time Diversion, Humphreys County

	Tons Disposed	Waste Diverted	Total Waste	% Diverted
2007	16,564.6	33,715.9	50,280.5	67.1
2008	14,522.7	30,318.2	44,840.9	67.6
2009	13,948.0	27,257.8	41,205.8	66.2
2010	14,136.0	30,368.3	44,504.3	68.2
2011	9,374.8	19,314	28,688.8	67.3

The county has reduced total waste significantly, and has doubled the waste diverted versus the tons disposed in each year. Humphreys 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 throughput. 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
West Camden Sanitary Landfill	2,500	3,500	20
Humphreys County Class III Landfill	7	10	2
Bi-County Sml Balefill	655	900	96

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	Pop. Total Under This Service	Frequency of Service (Weekly, Bi-weekly, on call, etc.)	Tonnage Capacity	Type Service (Curbside, Convenience Center, Green Box)
Humphreys County	County Excluding Waverly	14,144	6 Days a Week	278 Tons a Week	Convenience Center
City of Waverly	City Limits	4,131	Weekend	45 Tons a Week*	Curbside
James Center	County	18,275	6 Days a Week	2.5 Tons a Week	Recycling

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.

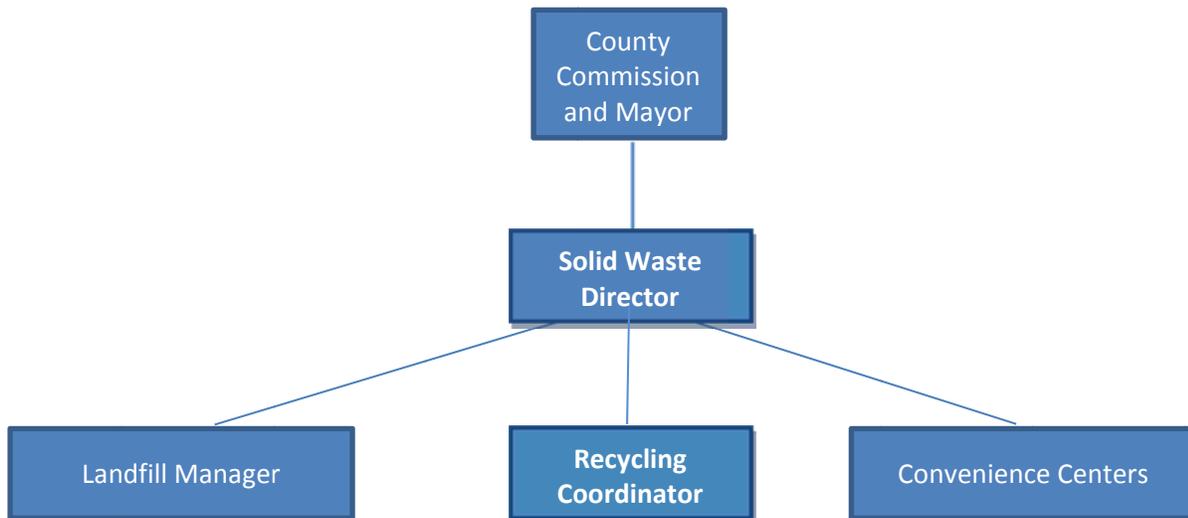
EXPENDITURES			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year**
Salary and Benefits		\$90,000*	\$90,000
Waste Pickup			
Collection and Disposal Systems			
Equipment		\$250,000	\$250,000
Sites		\$150,000	\$150,000
Convenience Center			
Transfer Station			
Recycling Center			
Problem Waste Ctr.			
Compost Center			
Other Collection			
Landfills	\$602,288		\$602,288
Site			
Operation			
Closure			
Post Closure Care			
Other Waste Disposal			
Administration (supplies, communication costs, etc.)			
Education			
Public			
Continuing Ed.			
Capital Projects			
REVENUE			
Host agreement fee			
Tipping fees	\$18,700		
Property taxes			
Sales tax	\$827,600		
Surcharges			
Disposal Fees			
Collection charges			
Industrial or commercial charges			
Residential charges			
Convenience Center charges			
Transfer Station charges			
Sale of Methane Gas			
Sale of Recycled Materials	1,600.00		
Solid Waste Grants			
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 Waverly’s Public Works Director is in charge of the solid waste program, and reports to the City Manager, who in turn reports to the Mayor.

Humphreys County, Tennessee

Convenience Centers

- Convenience Centers
- Interstate
- U.S. Route
- State Route
- Parks/Public Land
- Corporate Boundaries



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Map prepared by the Greater Nashville
Regional Council (GNRC)
501 Union Street
Nashville, TN 37203-1705

The data used for this map was provided
through various sources, and the Greater
Nashville Regional Council does not
guarantee the accuracy therein.



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 sales tax, followed by tipping fees and sale of recycled materials. The solid waste program relies heavily on the county sales tax revenue and TDEC grants. Humphreys remains relatively conservative in its approach for funding new items, due to its constrained budget.

The county offers many solid waste services to its citizens, and does well given the size and population. The main item of note involves equipment for the recycling centers. Necessary and better equipment will be needed to increase the capabilities of the recycling program. In addition, the ancillary needs such as staffing will also need to be addressed once these items are implemented, adding a running annual cost.

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?

Humphreys County works to increase the efficiency of their recycling program through education and public outreach. This will assist in modifying the public's behavior over time, and eventually attitudes will follow once it becomes the standard.

Educational efforts are conducted with county students by the solid waste coordinator. Recycling, composting, and littering are main topics covered by these numerous programs. In addition, the coordinator goes to area businesses and speaks on the local radio station to assist in educating the public on the importance and benefit of recycling.

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. Humphreys 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 Humphreys 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.