CHEATHAM COUNTY SOLID WASTE NEEDS ASSESSMENT

FY 2011

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Demographic Information and 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 - Cheatham County has achieved significant population growth in the past decade, with more growth expected in the next ten years. Between 2000 and 2010, Cheatham County's total population has grown from 35,912 to 39,105, an 8.9% growth rate. Cheatham County was Tennessee's 39th most populous county in 2010.

Cheatham County has four incorporated municipalities, Ashland City, Kingston Springs, Pegram, and Pleasant View. See Table 1 and Chart 1 below for depictions of historic population change in Cheatham County and its cities.

Table 1: CHEATHAM COUNTY HISTORIC POPULATION 2001-2010

	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Ashland City	4,541	4,451	4,361	4,271	4,181	4,091	4,001	3,911	3,821	3,731
Kingston Springs	2,756	2,758	2,760	2,762	2,763	2,765	2,767	2,768	2,770	2,772
Pegram	2,093	2,099	2,104	2,109	2,114	2,120	2,125	2,130	2,136	2,141
Pleasant View	4,149	4,028	3,907	3,785	3,663	3,541	3,420	3,298	3,177	3,056
Unincorporated	25,566	25,452	25,338	25,223	25,108	24,993	24,878	24,763	24,648	24,533
CHEATHAM COUNTY TOTAL	**39,105**	**38,786**	**38,467**	**38,148**	**37,828**	**37,509**	**37,189**	**36,870**	**36,551**	**36,232**

Source: U.S. Census Bureau-2010 Census, GNRC Linear Trend Analysis

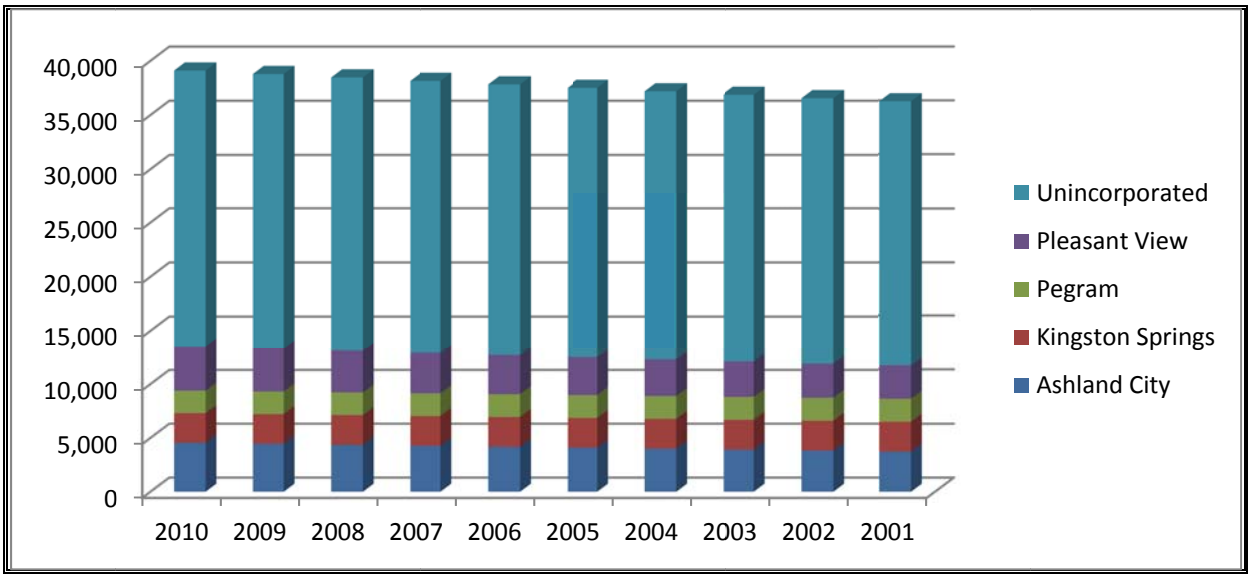


Chart 1-Cheatham County Historic Population, 2001-2010

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 Cheatham 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 show a significantly slower trend of growth than experienced in the previous decade for communities such as Pleasant View and Ashland City, and given current residential permitting, would seem to be an accurate estimate. The communities of Pegram and Kingston Springs also are estimated to increase in population, after a loss for both from 2000-2010. For purposes of this report, the population projections from the **University of Tennessee** will be used. (see Table 2 and Chart 2 below).

Table 2: CHEATHAM COUNTY POPULATION PROJECTIONS						
	2011	**2012**	**2013**	**2014**	**2015**	**2016**
Ashland City	4,564	4,587	4,611	4,634	4,658	4,681
Kingston Springs	2,770	2,784	2,799	2,813	2,827	2,841
Pegram	2,103	2,114	2,125	2,136	2,147	2,157
Pleasant View	4,170	4,192	4,214	4,236	4,256	4,278
Unincorporated	25,874	26,181	26,486	26,792	27,100	27,408
CHEATHAM COUNTY TOTAL	**39,481**	**39,858**	**40,235**	**40,611**	**40,988**	**41,365**
Source: UT-CBER 2011, GNRC Linear Trend Analysis 2010-2016.						

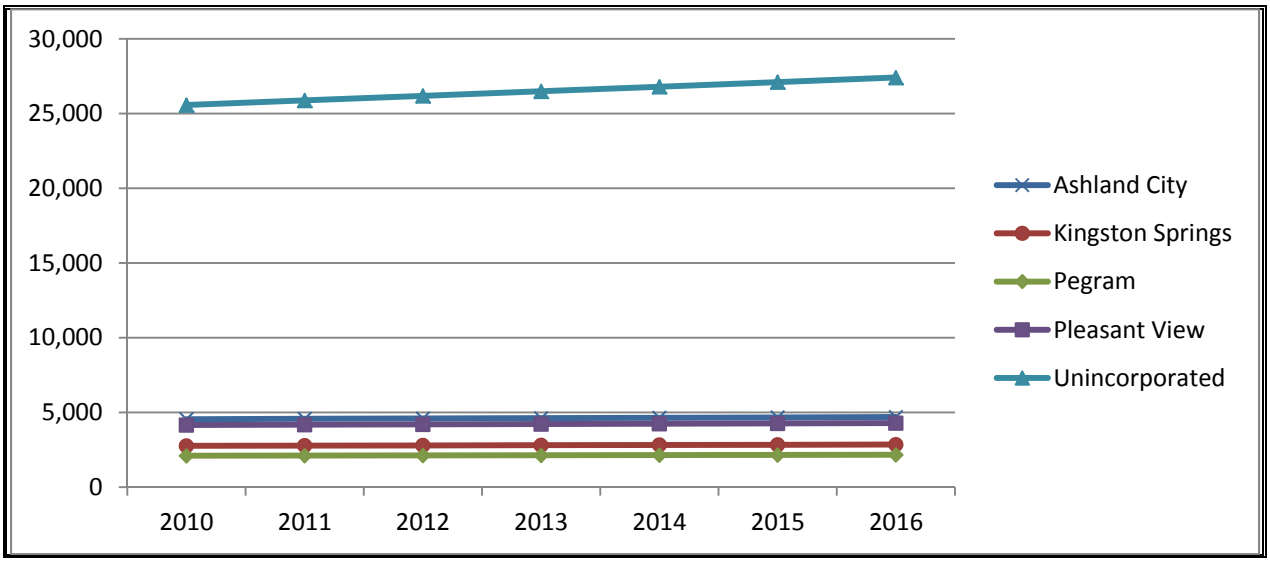


Chart 2-Cheatham County Population Projections, 2010-2016

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 (2.67, 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 Cheatham 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 Estimated Cheatham Pop. (U.S. Census)	2015 Projected Population	Population Increase 2010-2015	Average Household Size	Potential New Cheatham County Households, 2015
39,105	40,988	4.8%	2.67	705

However, the recent economic downtown has affected Cheatham County, as it has most areas of the country. Recent residential building permit records show that while making long-term projections would be difficult, the short-term effects of the economic recession has dramatically slowed the pace of new residential construction. The number of new residential building permits in all of Cheatham County decreased from 2009 to 2011, from 61 in 2009, to 50 in 2010, then 28 in 2011, drastically less than the average of over 200 each year over the previous decade. The slowing pace of building permit applications seems to indicate that the population projections may not materialize at the pace predicted. Even when the economy rebounds, as many believe it will, 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 Cheatham County will no doubt continue to grow, the current rate of growth appears to have dropped further than future projections have indicated.

Economic Profile

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: CHEATHAM COUNTY SELECTED ECONOMIC DATA, HISTORIC AND PROJECTED 2001 - 2016

YEAR	LABOR FORCE	UNEMPLOYMENT	UNEMPLOYMENT RATE	PER CAPITA INCOME	PROPERTY TAX	RETAIL SALES
2001	19,630	670	3.4	25,793	$23,457,384	$172,690,479
2002	19,590	790	4.0	26,852	$13,577,245	$160,112,370
2003	19,610	840	4.3	27,716	$14,436,218	$181,213,043
2004	20,010	920	4.6	28,709	$15,301,792	$229,147,597
2005	20,490	900	4.4	29,999	$15,795,416	$252,373,824
2006	20,840	850	4.1	31,602	$16,224,208	$286,669,523
2007	20,250	810	4.0	32,577	$17,945,469	$301,422,915
2008	20,350	1,130	5.6	32,507	$18,571,864	$305,207,447
2009	20,280	1,900	9.4	30,840	$18,999,306	$232,521,957
2010	20,350	1,850	9.1	30,950	$18,768,713	$220,016,811
2011	20,850	1,780	8.5	32,781	$19,822,349	$214,884,101
2012	20,610	1,590	7.7	34,613	$19,593,211	$227,892,360
2013	20,580	1,317	6.4	36,444	$20,107,867	$230,165,397
2014	20,740	1,224	5.9	38,276	$20,644,232	$248,255,240
2015	20,810	1,124	5.4	40,109	$20,358,063	$231,200,000
2016	20,860	1,043	5.0	41,941	$21,089,491	$259,518,893

Sources: TN Dept of Labor & Workforce Dev, Div Emp Sec, R&S; TN Dept of Revenue; Cheatham County Trustee; TACIR; Woods & Poole 2012 State Profile; GNRC Estimates

Cheatham County has a labor market reflective of both its rural nature and its proximity to Nashville. Property tax collections have slowed throughout the economic downturn, and retail sales, which generate sales taxes, were also negatively affected, but comparable to other counties in Middle Tennessee.

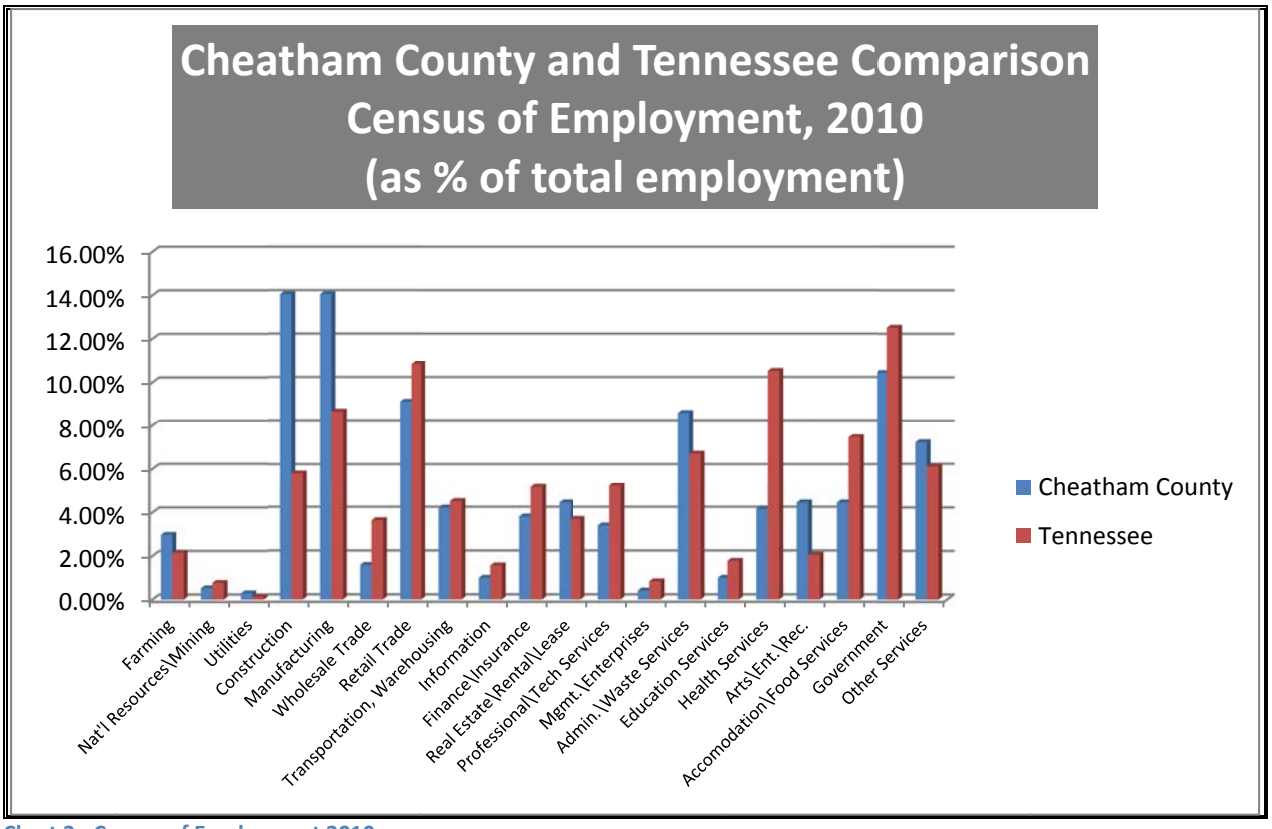


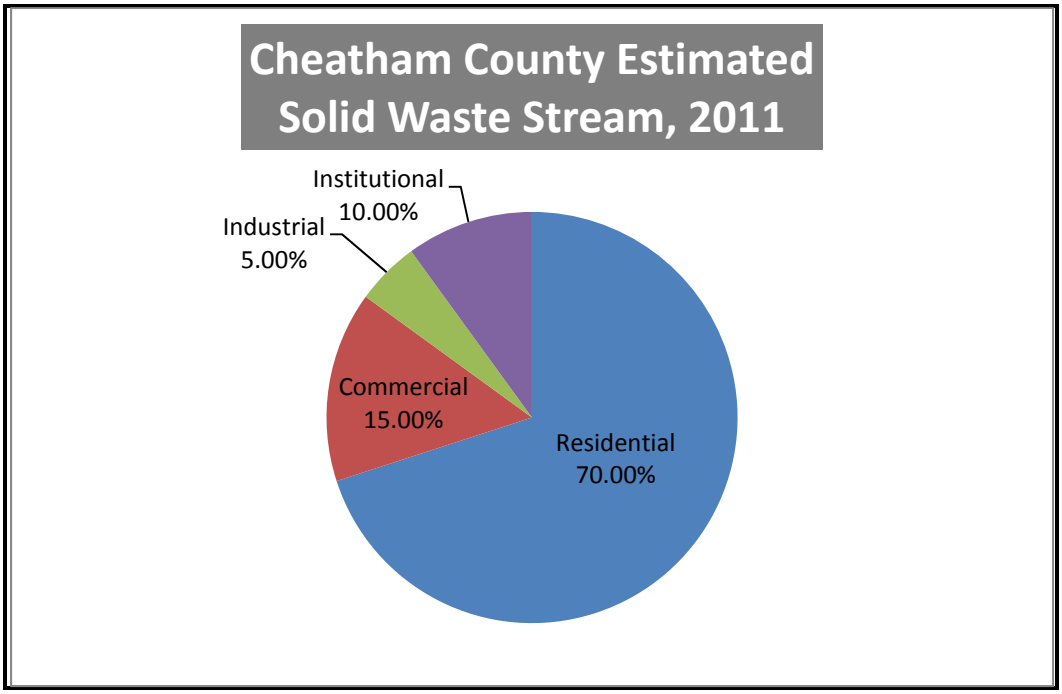
Chart 3 - Census of Employment 2010

Source: Woods & Poole, 2011 TN State Profile

Cheatham County's sector employment does not follow State of Tennessee trends, as shown above from the *Woods & Poole, 2012 TN State Profile*. Cheatham County far surpasses the State averages for employment in the Construction and Manufacturing categories, and is more dependent on Administrative\Waste Services and Arts\Entertainment\Recreation than the State as a whole. Cheatham's attractiveness as a residential growth area is reflected in the much higher-than-average construction employment. Cheatham County employs fewer people in the Government, Retail Trade, and significantly, the Health Services Sector. The State of Tennessee Department of Labor and Workforce Development includes Cheatham County in its Labor and Workforce Investment Area (LWIA) #8 (which also includes Cheatham, Dickson, Houston, Humphreys, Montgomery, Robertson, Stewart, and Sumner 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**.

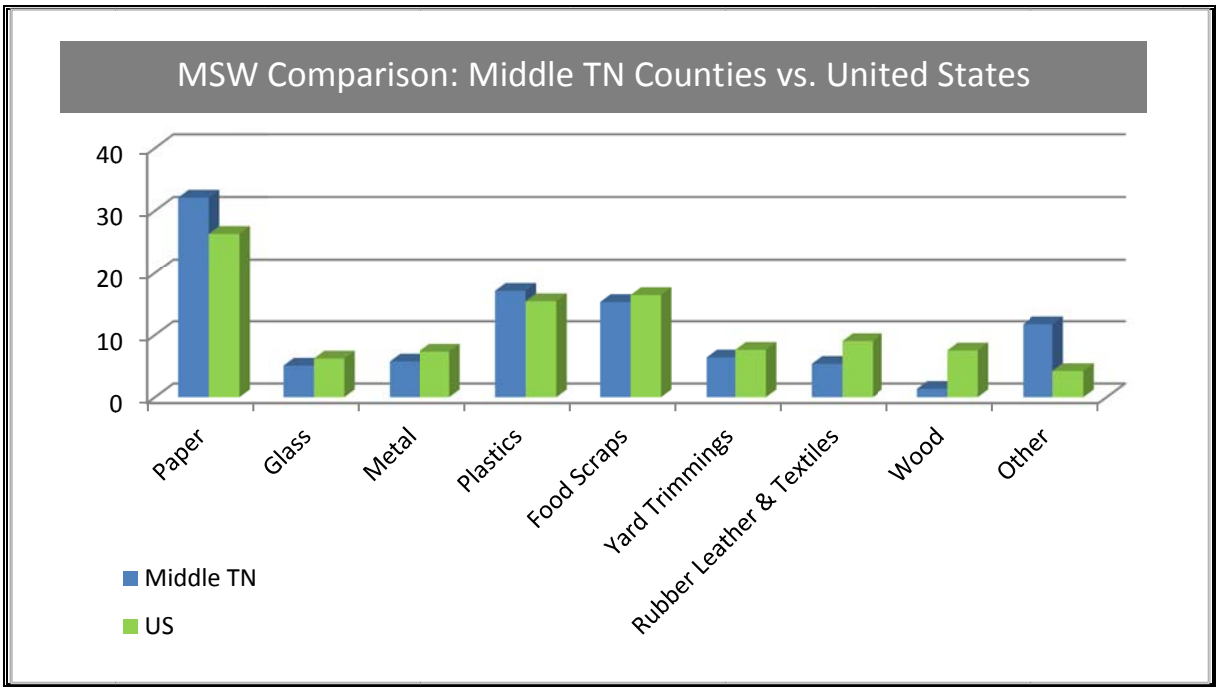
Solid Waste Stream

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.



Cheatham County's waste stream is primarily residential waste (70%), far exceeding all other categories. Commercial (15%), institutional (10%), and industrial (5%) together comprise the remainder of the total waste stream. This is reflective of the county's function as a satellite county to Davidson; while a few major industries such as A.O. Smith are located here, the cities are considered primarily "bedroom communities," with many of the residents commuting to other counties for work. Given this, and future trends continuing, the waste stream breakdown will likely remain primarily residential.

The composition of the waste stream specific to Cheatham County has not been measured, however, 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 Cheatham County.



Cheatham County successfully handles problem wastes, such as oil, batteries, and tires. The county is hoping to receive funding for the means to collect paint for recycling. Restarting the collection of e-scrap is a priority for the county for 2012-2013. The local recycling program saw a loss in collection reported in 2011 (11,999 tons), down from over 16,000 tons in each of the two previous years. However, overall solid waste disposal has also dropped significantly each year between 2009 and 2011, from 22,186 tons in 2009 to 17,464 tons in 2011.

Cheatham County faces budgetary constraints that make it difficult to implement ways to improve their solid waste collection and recycling program. They have examined the feasibility of a number of options, including:

- Northwest Cheatham Convenience Center – This would provide a more convenient location for drop off for residents of this part of the county, including the fast-growing town of Pleasant View.

- Recycling Coordinator – The county lacks a recycling coordinator to spearhead collection and education efforts for the county. The addition of this position would add a running cost to the county budget, however, the benefit of what the position will provide over time is difficult to assign a dollar amount to.

- Additional Recycling Initiatives - Cheatham County hopes to offer recycling of additional materials, specifically e-waste, paint, and plastic. New facilities or upgrades will be needed to provide the means to collect these materials. Additionally, an increase in staffing may need to be examined depending on the additional workload associated with the new initiatives.

Cheatham County hopes to offer more recycling options (one or more of the above) within the next five years.

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.

Cheatham County does not provide any home waste collection service within the county. The residents either contract with private haulers, or utilize the five existing convenience centers located throughout the county. Information is not available on residents using private haulers, (which include BFI and Waste Management) such as quantity taken and which landfill this waste is taken to.

Residents of Ashland City and the surrounding area typically use the Ashland City\Thompson Road Convenience Center. Residents in the north central part of Cheatham County, including the town of Pleasant View, currently use the Old Clarksville Pike\Pleasant View center. West Cheatham residents, including the unincorporated Chapmansboro area, use the West Cheatham convenience center. The Sams Creek Landfill and Convenience Center is available to southern Cheatham residents, including Pegram and Kingston Springs. The newest convenience center is located near the unincorporated community of Petway , and is made available to county residents in this portion of the county.

In 2011, a large majority of all waste collected by the county (14,672 tons) went to Bi-County SNL Balefill, located in Montgomery County. Approximately 10% of that total each went to West Camden Sanitary Landfill (1,442 tons), located in Camden, TN, and Middle Point Landfill (1,350 tons), located in Murfreesboro, TN.

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, Cheatham County

Year	Tons Disposed	Population	Tons Per Capita
1995	18,406	32,428	0.57
2000	14,365	35,912	0.4
2011	17,464	39,481	0.44

The per capita diversion rate shows a 22.8% decrease between 1995 and 2011, falling just short of the goal of 25%.

Real Time Diversion, Cheatham County

	Tons Disposed	Waste Diverted	Total Waste	% Diverted
2007	18,986.00	51,566.90	70,552.90	73.1
2008	20,964.00	27,745.20	48,709.20	57
2009	22,186.00	19,209.70	38,463.70	49.9
2010	20,099.10	16,380.10	36,479.20	44.9
2011	17,463.80	11,999.20	29,463.00	40.7

The county had an exceptional diversion rate (73.1%) in 2007, however, a considerable amount of total waste was disposed of that year. There has been a steep drop in recycled materials during 2007-2011, but the actual waste disposal remained fairly static during this period. This affected the diversion rate considerably, falling each year to a 5 year low of 40.7% in 2011, thereby meeting 25% reduction each of the last five years.

Collection & Disposal Capacities/Collection Service Providers

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.*

Site Name(s)	Current Capacity (Tons/Day)	Maximum Capacity (Tons/Day)	Project Life of Facility
West Camden Landfill	2,500	3,500	21
Bi-County Snl Balefill	655	900	99
Middle Point Landfill	4,000	5,500	12

B. *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)
Private Haulers	County	39,481	Weekly	n\a	Curbside

Financial Needs

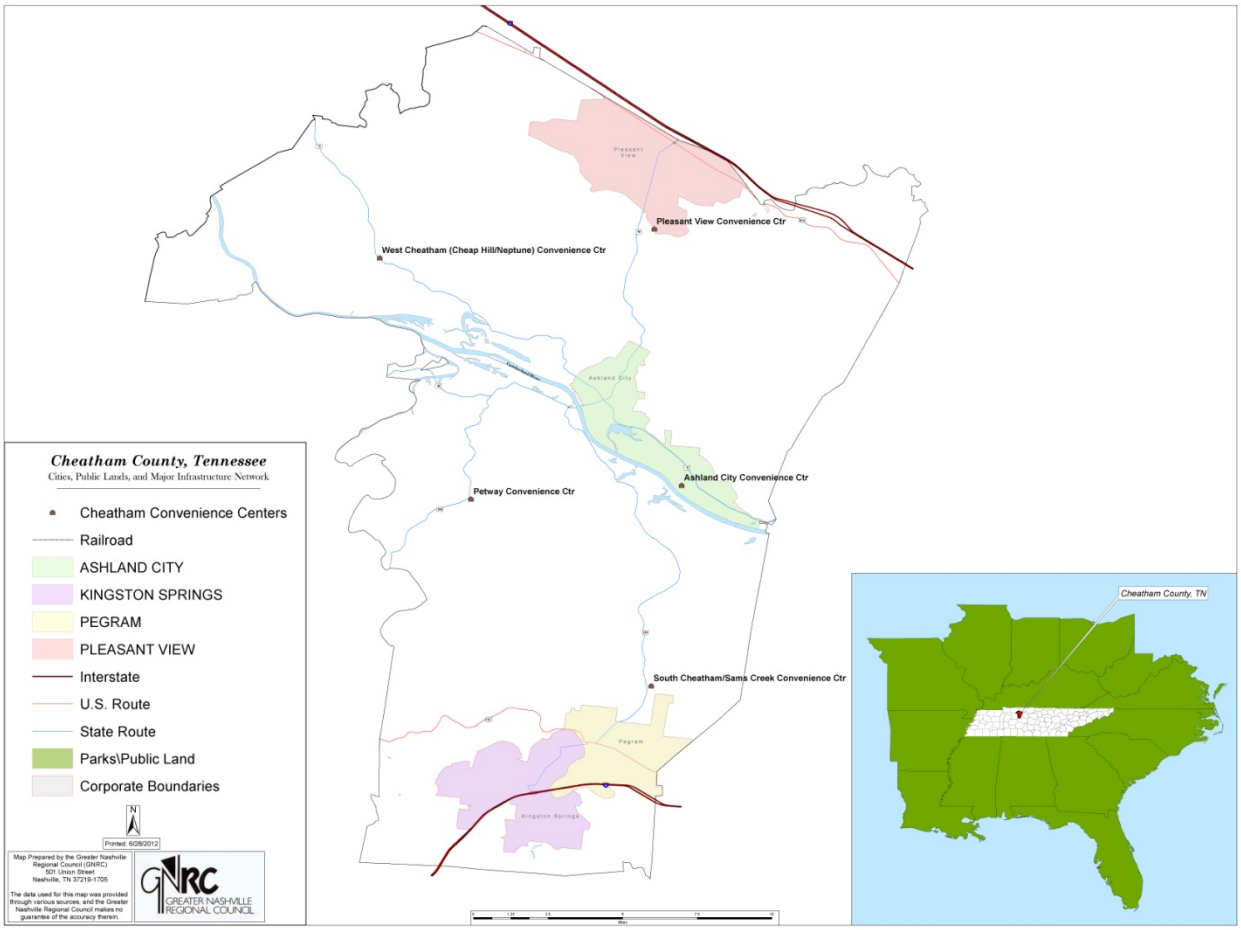
Complete the chart below and discuss unmet financial needs to maintain current level of service. Provide a cost summary for current year expenditures and projected increased costs for unmet needs.

EXPENDITURES			
Description	Present Need $/year	Unmet Needs $/year	Total Needs (Present + Unmet) $/year
Salary and Benefits	25,000.00	125,000	150,000
Transportation/hauling	168,411.00		
Collection and Disposal Systems	827,357		
Equipment			
Sites			
Convenience Center	774,557.00	155,000	929,557
Transfer Station			
Recycling Center			
MRF			
Landfills	52,800.00		52,800
Site			
Operation			
Closure			
Post Closure Care			
Administration (supplies, communication costs, etc.)			
Education			
Public			
Continuing Ed.			
Capital Projects		900,000	
REVENUE			
Host agreement fee			
Tipping fees	195,000		195,000
Property taxes			
Sales tax			
Surcharges			
Disposal Fees			
Collection charges			
Industrial or commercial charges			
Residential charges			
Convenience Center charges			
Transfer Station charges			
Sale of Methane Gas			
Other sources: (Grants, bonds, interest, sales, etc.)	63,500		63,500

Lack of county funds create a number of unmet needs, including an additional convenience center. While this could be achieved in a one-time grant allocation, the running cost of additional staff cannot.

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.



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 is the County property tax, followed by tipping fees, sale of recycled materials, and State revenue sharing and grants. The solid waste program relies on a year-to-year budget allocation to remain viable. The County remains relatively conservative in its approach for funding new items, particularly with staffing needs, which bear an annual cost. These items will need to be addressed in the future to make the solid waste program more effective.

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?

Cheatham County's recycling efforts have been more pronounced over the last fifteen to twenty years, despite the decrease in actual materials recycled over the last five years. The loss of some major industries in the area, such as Trinity Marine and Triton Boats, has caused a drastic decrease in industrial recycling during that period.

Cheatham County also offers "Clean Sweep" twice a year. In addition, the mobile hazardous waste center is in Cheatham County annually.

The County utilizes litter grants to educate children on the importance of recycling and litter prevention, as well as litter pickups, community events and education, and media outreach. This is important, as Cheatham grows from a county with once small, rural communities into one that supports larger suburban cities, which will rely on its increasing numbers of residents to make responsible and thoughtful decisions regarding waste disposal and recycling.

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. New and existing items are evaluated by the County Commission on an annual basis, along with other budgetary items. The County will continue its current education programs on appropriate waste reduction, management and disposal. Education not only encourages positive waste management habits by the public, but also builds a constituency that is willing to fund a sound waste management program.

The efforts put forth by the county and plan support the Statewide Solid Waste Management Plan. Waste reduction and diversion is a common goal that the county intends to improve on. This is contingent on receiving continued assistance and grant funding from the state to carry on existing activities, as well as add new initiatives.