

**2009  
CARTER COUNTY  
SOLID WASTE  
DISTRICT  
NEEDS  
ASSESSMENT**

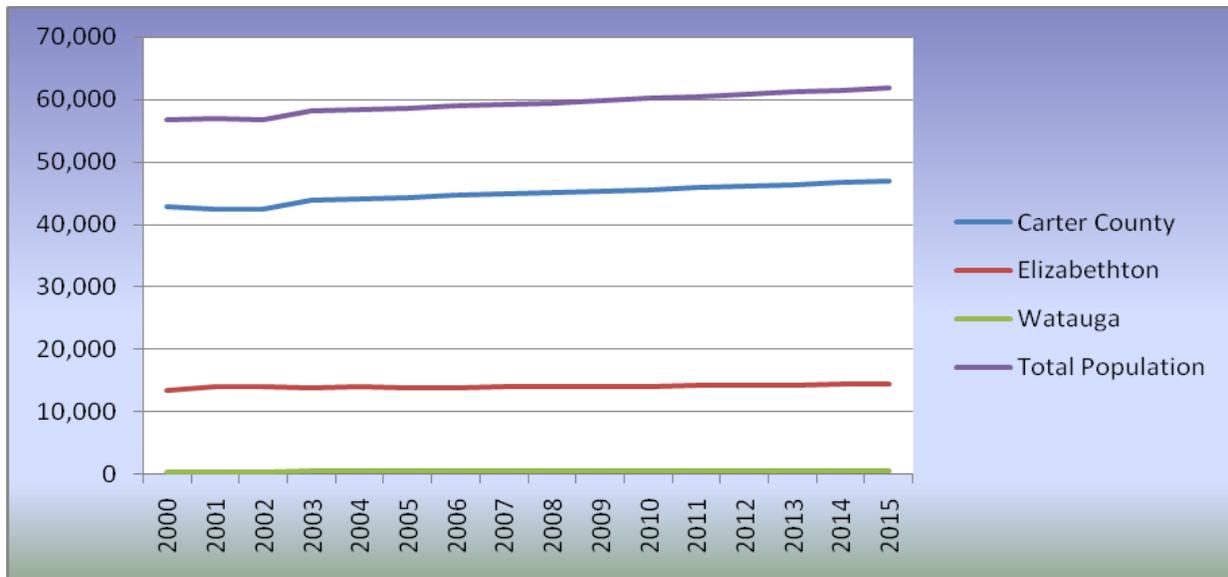


***Prepared by  
First Tennessee Development District***

**Item#1**

**Provide a table and chart showing the region's population for the last ten (10) years with a projection for the next five (5) years. Provide a breakdown by sub-table and sub-chart, or some similar method to detail all county and municipality populations. Discuss projected trends and how it will affect solid waste infrastructure needs over the next five (5) years.**

Year	Carter County	Elizabethton	Watauga	Total Population
2000	42,966	13,372	404	56,742
2001	42,509	13,971	405	56,885
2002	42,476	13,953	415	56,844
2003	43,947	13,895	432	58,274
2004	44,054	13,942	433	58,429
2005	44,366	13,888	430	58,684
2006	44,664	13,905	428	58,997
2007	44,847	13,925	426	59,198
2008	45,112	13,955	425	59,492
2009	45,380	14,028	428	59,836
2010	45,649	14,101	430	60,180
2011	45,917	14,174	433	60,523
2012	46,185	14,247	436	60,867
2013	46,453	14,319	438	61,211
2014	46,722	14,392	441	61,555
2015	46,990	14,465	443	61,898



Overall, the population trends of Carter County, Elizabethton and Watauga do not indicate a significant increase over the next 5 years and therefore is not expected to put serious stress on the County's solid waste management system. Over the next 5 years,

there may be some expansion of the County's drop-off collection system, but it will not be in response to overall population growth. Growth in certain areas of the County may dictate and expansion of the drop-off system to include another convenience center. With the exception of a potential additional convenience center, there are no other identifiable solid waste infrastructure needs projected over the next 5 years.

## Item #2

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

- Taxable sales, property tax generation, and per capita income
- Evaluation by break down of each economic sector
- County or municipal budgeting information
- Other commonly accepted economic indicators

Includes Carter County, Elizabethton and Watauga Historic and Projected Economic Indicators

<i>Year</i>	<i>Total Employment</i>	<i>Unemployed</i>	<i>Unemployment Rate</i>	<i>Per Capita Income</i>	<i>Retail Sales</i>
1998	25,860	1,340	5.20%	\$16,884	-
1999	26,070	1,310	5.00%	\$17,561	-
2000	27,840	1,360	4.90%	\$18,693	\$355,442,306
2001	27,680	1,400	5.00%	\$19,477	\$360,072,711
2002	27,730	1,830	6.60%	\$19,985	\$354,281,201
2003	28,550	1,830	6.40%	\$19,968	\$351,960,440
2004	28,860	1,730	6.00%	\$21,199	\$366,288,135
2005	28,890	1,660	5.80%	\$21,832	\$427,242,216
2006	29,350	1,460	5.00%	\$22,863	\$443,655,074
2007	29,240	1,470	5.00%	\$23,987	\$459,045,458
2008	29,780	1,920	6.40%	\$24,697	\$439,336,952
2009	30,151	1,981	9.80%	\$25,411	\$447,726,417
2010	30,382	2,043	9.70%	\$26,083	\$456,954,828
2011	30,652	2,107	7.40%	\$26,743	\$466,643,039
2012	30,945	2,135	5.20%	\$27,419	\$477,869,223
2013	31,184	2,166	5.32%	\$28,164	\$490,471,101
2014	31,416	2,209	5.39%	\$28,861	\$502,889,398
2015	31,669	2,264	5.43%	\$29,564	\$510,454,116

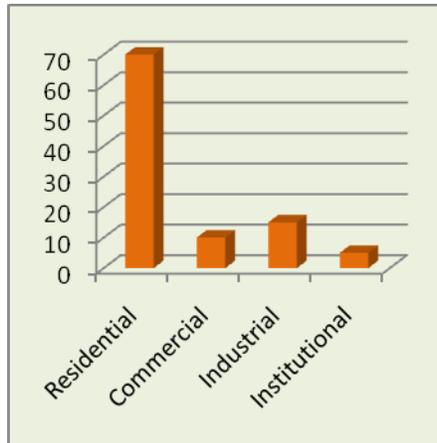
Source: U.S. Bureau of Economic Analysis, ETSU Bureau of Economic Research, Tennessee Comptroller of the Treasury, Tennessee Department of Labor, First Tennessee Development District staff.

**Item #3**

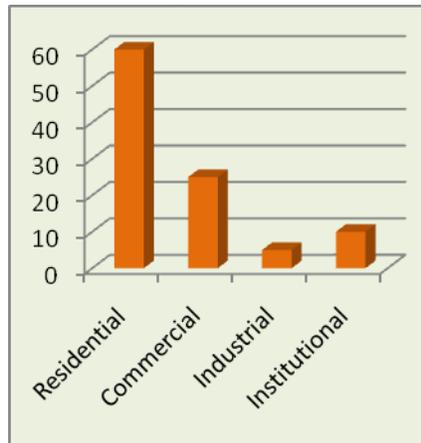
**Elaborate on the entire region’s solid waste stream. Compare today’s waste stream with anticipated waste stream over the next five (5) years. How will the total waste stream be handled in the next five (5) years? Include in this discussion how problem wastes like waste tires, used oil, latex paint, 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.**

Primarily, Carter County’s waste stream is comprised of residential waste. In the past, industrial and commercial generators contributed more heavily to the County’s overall waste stream. However, in more recent years the decline of industries and commercial businesses in Elizabethton and Carter County have caused a decline in the generation rate of solid waste from these sectors. There are no significant changes in the way the County handles the total waste stream in the next 5 years. The one proposed change in the County’s system is a potential new Materials Processing Facility and additional recycling drop-off sites to collect recyclables. The Carter County Transfer Station has the capacity available to handle additional tonnage that might be expected from normal population growth and any industrial, institutional or commercial expansion.

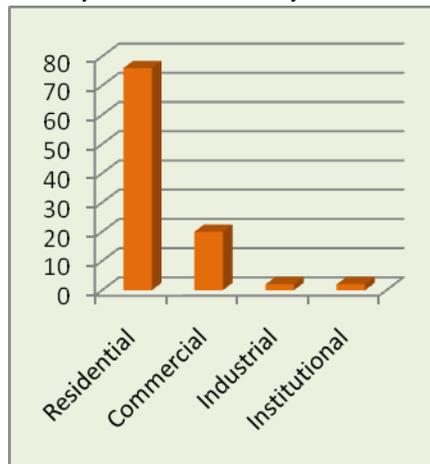
1999 Carter County Estimated Waste Stream



2007 Carter County Estimated Waste Stream



2012 Projected Carter County Waste Stream



Special wastes such as used oil and batteries are collected at the Transfer Station location and subsequently recycled. Carter County does not have a program for latex paint or electronics. Officials have felt that there are not enough funds in the County's system to effectively manage paint and electronics on a regular basis. Plans are being made for a one-day e-waste collection event in partnership with the local Walmart in Elizabethton. There are no other wastes, in the Region, that require special handling protocols. Industrial and commercial wastes are collected managed by the private sector, or by the City of Elizabethton for businesses in the city limits. All private wastes are either disposed in the Transfer Station or transported directly to disposal (Class I). There are no significant amounts of wastes entering the Region for disposal, however, all of the solid wastes generated in Carter County are transported out of the Region for disposal. Elizabethton disposes of its waste in the Iris Glen Environmental Center (Johnson City) and Carter County disposes of its waste in the Carter's Valley Landfill (Hawkins County).

#### **Item #4**

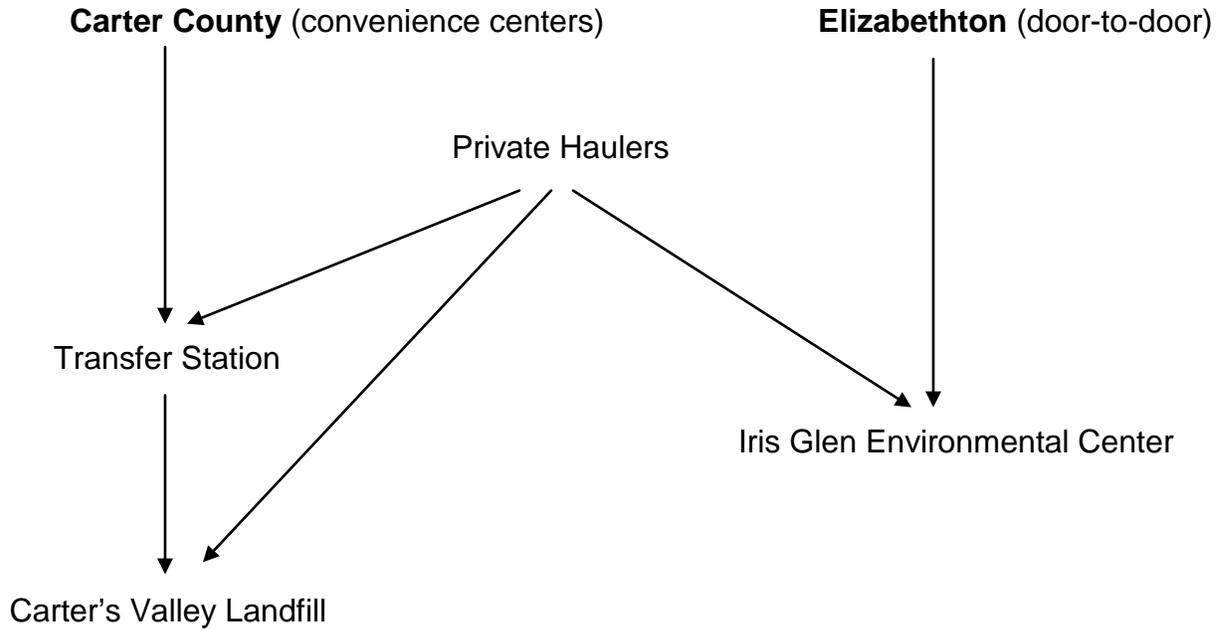
**Describe in detail the waste collection system of the region and every county and municipality. Provide a narrative of the life cycle of solid waste from the moment it becomes waste (loses value) until it ceases to be a waste by becoming a useful product, residual landfill material or an emission to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

There are 2 municipalities in Carter County. Elizabethton provides door-to-door collection for each household in the City. The City of Watauga provides collection service via contract with a private hauler. Waste from Elizabethton and Watauga is disposed in the Iris Glen Environmental Center in Johnson City, operated by Waste Management, Inc. Waste generated from Carter County's two convenience centers as well as from private haulers in the County, is disposed of in the Carter's Valley Landfill in Hawkins County, owned by BFI/Allied Waste. All waste disposed in the Carter's Valley Landfill is moved through the Carter County Transfer Station. Some waste collected by private haulers collecting in the County is likely transported directly to the Iris Glen Environmental Center in Johnson City. Like most other small rural counties in the State, Carter County does not operate a door-to-door solid waste collection program, therefore the Transfer Station also serves as a drop-off convenience center.

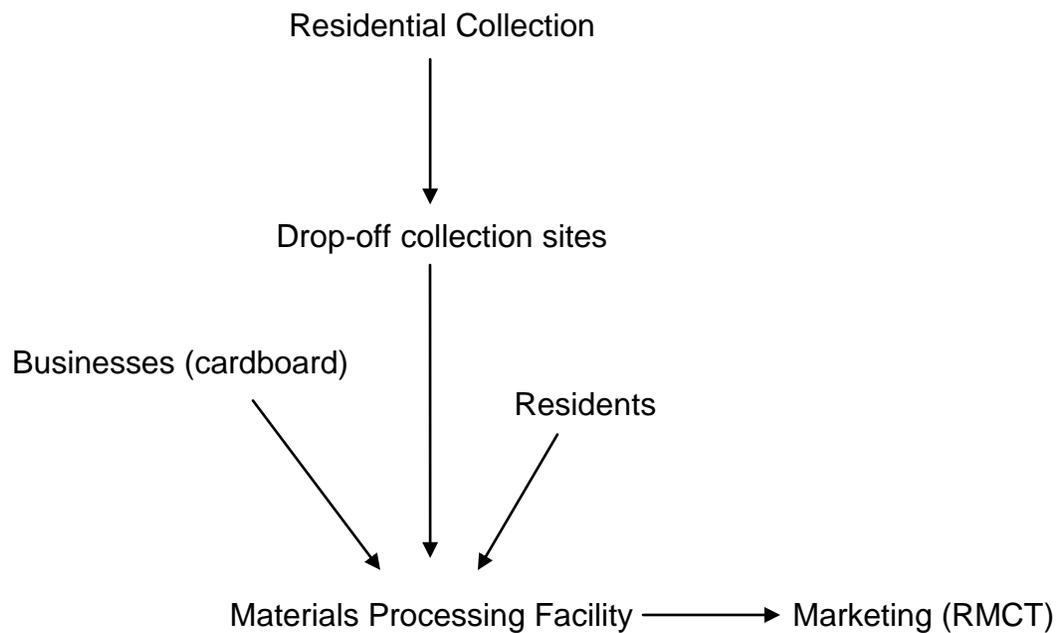
There are multiple opportunities for residents of Carter County to participate in recycling efforts. The County operates 2 drop-off sites and a Materials Processing Facility. Carter County also provides cardboard collection services for commercial and industrial clients throughout the County. This service was provided at no charge but economic conditions have forced the County to begin charging a fee for this service. Approximately 20 commercial entities are now enrolled in this program. All recyclables collected in Carter County are processed at the Carter County Materials Processing Facility. Future plans for the County's recycling program include building a new processing facility or a potential partnership with a private processor for processing the County's recyclables. Carter County is also planning to expand drop-off sites to include each of the County's 5 high schools. These sites will serve as dual purpose drop-off sites. The schools will be provided recycling collection as well as the residents located near these sites. A recently submitted Recycling Equipment Grant, if funded, will be used to purchase collection containers to expand the program to the schools. The County's Annual Solid Waste Progress Report directly reflects the County's desire to expand recycling services to schools.

The following is a flow diagram indicating the flow of solid waste from the point of generation to the point of disposal. At no time during this process does the solid waste become a useful product. Recyclables become a marketable commodity once they are collected and processed.

### SOLID WASTE

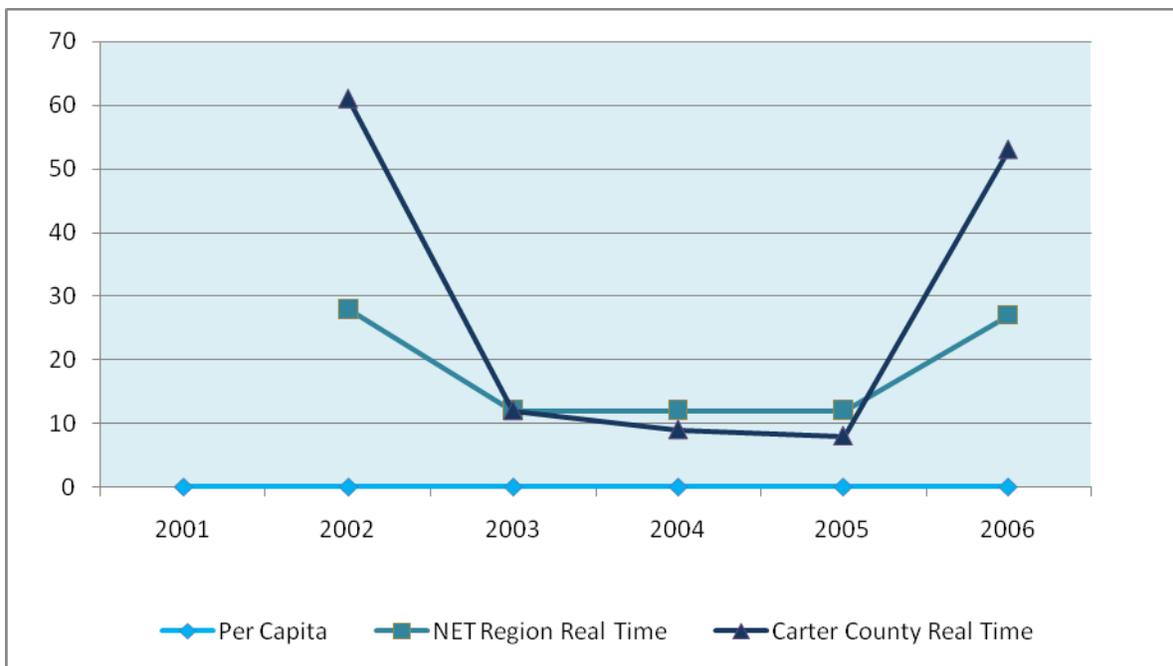


### RECYCLABLES



**Item #5**

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.



Carter County Per Capita Waste Reduction Rate vs Real Time Comparison 2001 – 2006.

Year	NET Region Current Year Disposal	NET Region Base Year Disposal	NET Region Per Capita Waste Reduction Rate	NET Region Real Time Comparison	Carter County Real Time Comparison
2001	196,244 tons	150,983 tons	-19%	N/A	N/A
2002	203,693 tons	150,983 tons	-24%	28%	61
2003	222,202 tons	150,983 tons	-33%	12%	12
2004	233,842 tons	150,983 tons	-39%	12%	9
2005	237,539 tons	150,983 tons	-40%	12%	8
2006	236,613 tons	150,983 tons	-38%	27%	53

Carter County has successfully met the State's 25% waste reduction goal twice since 2001 using the "real time" calculation method. This is due primarily as a result of a successful commercial and industrial recycling/waste reduction survey. Carter County is a member of the Northeast Tennessee Solid Waste Planning Region, which consists of Carter, Johnson, Unicoi and Washington Counties. The Region as a whole has been successful in meeting the goal twice since 2001 using the "real time" calculation method. We believe the years Carter County failed to meet the goal when using the "real time" calculation method, is primarily due to the lack of recycling and waste reduction data from private entities such as businesses and industries. Historically, across the State, Region's that have a high participation rate from businesses and industries in reporting recycling data, typically achieve >25% waste reduction rate using the "real time" calculation method. Carter County and the other counties in the Northeast Tennessee Region have been implementing a business and industry waste reduction and recycling reporting program through the First Tennessee Development District the past few years. This is voluntary program started by the Development District in 2001-2002. Nearly 50 businesses and industries in Carter County are surveyed each year by the Development District. Unfortunately, if participation is low, the percentage of waste reduction is also low. State mandated participation in this type of reporting program, by businesses and industries, would greatly demonstrate the true amount of recycling and waste reduction that is occurring in each County but is not reported.

There are several infrastructure improvements that Carter County needs to make in the next 5 years. Most notably among these improvements is replacing old, dilapidated equipment within the solid waste management system. This includes collection trucks, front-end loader, compactor (class III/IV landfill) and recycling collection truck. Carter County is facing significant expenses in the near future to replace equipment. An equipment replacement schedule is needed to continue the progress the County has made in its recycling and waste reduction efforts. Also, additional drop-off recycling sites and an additional convenience center are needed to meet the needs in areas of the County where population growth is occurring. These infrastructure needs have been identified as necessary to meet and maintain the State's current 25% waste reduction goal.

**Item #6**

**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>Site Name</b>	<b>Current Capacity</b>	<b>Maximum Capacity</b>	<b>Projected Life of Facility</b>
Carter County Transfer Station	1,500 tons/month	3,000 tons per month	25 years
Iris Glen Environmental Center (Waste Management)	1,400 tons/day	Depends on expansion plans and customer levels.	16 years

There appears to be no shortfalls in the ability of Carter County to manage the current waste stream or the projected waste stream over the next 5 years. The design of the County's transfer station is such that a significant amount more solid waste could be managed at this facility. Additional tonnage would only increase the number of trips to the landfill. Although additional trips will increase the costs, the current system is capable of managing current and projected waste streams. Transportation is currently done by a private hauling company contracted by the County.

**B. Provide a chart or 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.**

<i>Provider of Service</i>	<i>Service Area</i>	<i>Population Total Under This Service</i>	<i>Frequency of Service (Weekly, Bi-weekly, on call, etc.)</i>	<i>Tonnage Capacity (estimated)</i>	<i>Type Service (Curbside, Convenience Center, Green Box)</i>
Carter County	County-wide	44,500	Anytime during hours of operation	18,100tons/year	Transfer Station
Elizabethton	City Limits	13,944	Weekly	N/A	Curbside
Watauga	City Limits	430	Weekly	N/A	Curbside
Allied Waste	County	N/A	Weekly	N/A	Curbside
Waste Management	County	N/A	Weekly	N/A	Curbside
Other Private Haulers	County	N/A	Weekly	N/A	Curbside

**Item #7**

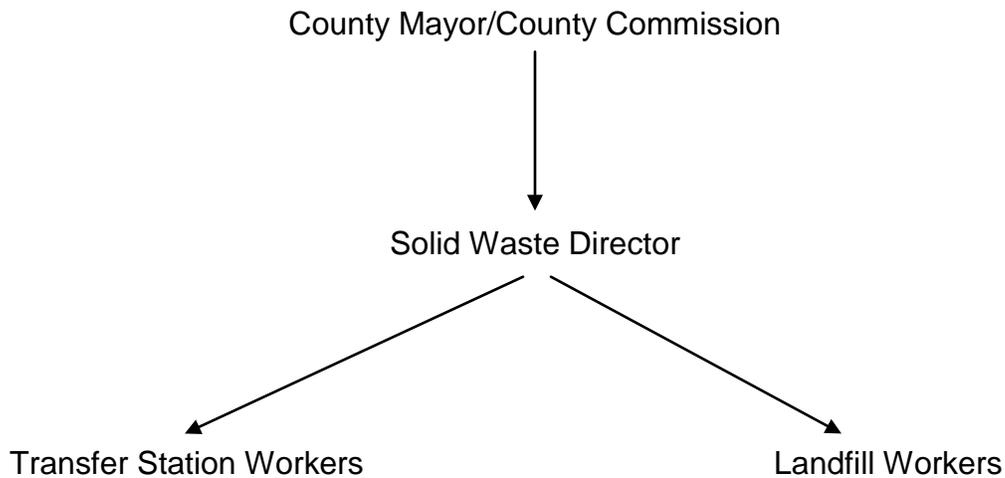
Complete the chart below and discuss unmet financial needs to maintain current level of service. Provide a cost summary for current year expenditures and projected increased costs for unmet needs.

<b>Expenditures</b>			
<i>Description</i>	<i>Present Need \$/year</i>	<i>Unmet Needs \$/year</i>	<i>Total Needs (Present + Unmet) \$/year</i>
Salary and Benefits	\$343,032		\$343,032
Transportation/hauling			
Collection and Disposal Systems			
Equipment	\$515,000	\$515,000	\$515,000
Sites			
Convenience Center	\$4,500		\$4,500
Transfer Station	\$264,587		\$264,587
Recycling Center	\$10,500		\$10,500
MRF			
Landfills			
Site	\$264,588		\$264,588
Operation			
Closure			
Post Closure Care			
Administration (supplies, comm. costs, etc.)			
Education			
Public			
Continuing Ed.			
Capital Projects			
<b>REVENUE</b>			
Host agreement fee			
Tipping fees	\$70,000		\$70,000
Property taxes	\$79,222		\$79,222
Sales tax			
Surcharges			
Disposal Fees			
Collection charges			
Industrial or Commercial charges			
Residential charges			
Convenience Centers charges			
Transfer Station charges	\$691,000		\$691,000
Sale of Methane Gas			

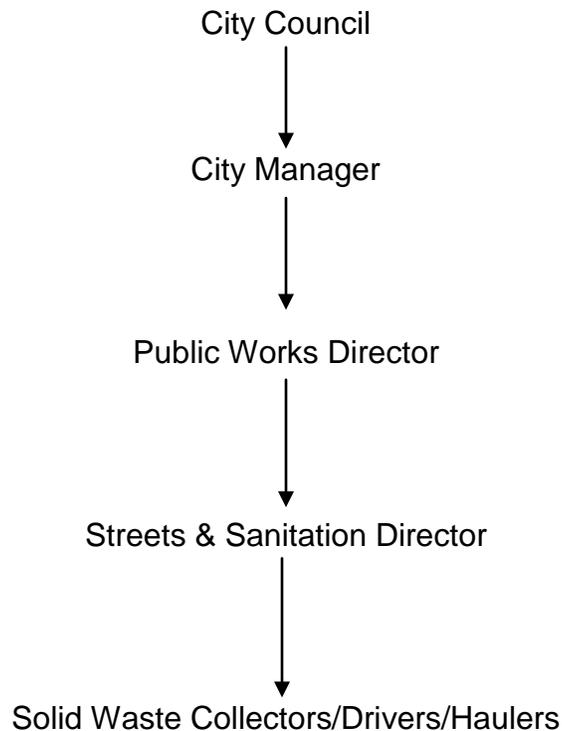
**Item #8**

**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.**

***Carter County  
Solid Waste Department Organizational Chart***



**City of Elizabethton**  
**Solid Waste Department Organizational Chart**



There are currently no identified needs in staffing or facilities to provide a full level of service. Carter County and Elizabethton are currently delivering a level of service that is meeting the needs of their respected communities. Replacing aged and outdated equipment will continue to be a need in both of the entities over the next 5 years, primarily Carter County. However, no additional equipment is needed to increase the level of solid waste collection and disposal services. A map showing all of the solid waste management facilities in the Region is attached. Two short-comings in the County's solid waste management system are the need to implement a continuous program for accepting and recycling e-waste and a program to accept latex paint to remove it from the HHW waste stream. Funding and staffing needed to implement a latex paint program are the primary obstacles at this time facing Carter County.

**Item #9**

**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.**

<b>Community</b>	<b>Current Revenue Source</b>
Carter County	General Fund
	Tipping Fees
	Grants
	Sale of Recycables
Elizabethton	Property Taxes
	Collection Fees

**Future Solid Waste Management Needs (5 year projection)**

<b>Community</b>	<b>Equipment</b>	<b>Estimated Costs</b>	<b>Potential Revenue Source</b>
Johnson County			
	New Landfill Compactor	\$250,000	General Fund
	Roll-Off Truck	\$90,000	Grants, General Fund
	Rear-Loader Truck	\$125,000	Grants, General Fund
	Water Truck	\$50,000	General Fund

Carter County is significantly underfunded in its solid waste management and recycling program. Tipping fees collected at the County’s transfer station are the primary funding source for the program. However, revenue generated from tipping fees in recent years has not been sufficient enough to adequately fund the program. Therefore to offset the budgetary shortfall, general funds have been used to balance the landfill/solid waste program budget. There are several pieces of equipment that need to be replaced and ongoing operating expenses continue to place a financial burden on the program. Ideally, tipping fees would be the sole source of revenue to fund the program, however with other disposal options in the area, tipping fees must remain competitive but well below the amount needed to fully fund the program. Carter County has tried several options to generate revenue, but tipping fees and general fund allocations will likely continue to be the source of revenue to meet solid waste management needs over the next 5 years.

#### **Item #10**

**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?**

Current attitudes of the citizens of Carter County toward recycling and waste reduction efforts have basically been about average for Counties of similar size, population and economic vitality. While there are some residents that fully support and participate in the drop-off recycling program, most residents are still reluctant to view recycling and waste reduction as an option. However, there appears to be some change in the behavior of the Community since the creation of the Carter County Chamber of Commerce Environmental Committee and efforts to establish a Keep America Beautiful affiliate. At its monthly meetings, the Committee regularly discusses waste reduction and recycling efforts in the County. The Chamber is also leading an effort to partner with a local materials processor to establish a more user friendly recycling processing system and drop-off site for residents of Elizabethton and annually includes discussions on the County solid waste management program in its Youth Leadership Program.

Furthermore, if funded, a new recycling equipment grant will be used to expand the County's drop-off recycling program at all 5 of the high schools in the County. Efforts from the County Mayor's office are being geared toward increasing participation in the County's recycling program and education will be a major component of this effort. The current general feeling is that most residents approve of recycling as an option to waste disposal but are not motivated to participate consistently. If measures could be implemented, a program designed to show the public the environmental and financial benefits to the community of recycling and waste reduction programs should be implemented.

#### **Item #11**

**Discuss this region's plan for managing their solid waste management system for the next five (5) years. Identify any deficiencies and suggest recommendations to eliminate deficiencies and provide sustainability of the system for the next five (5) years. Show how the region's plan supports the Statewide Solid Waste Management Plan.**

Carter County's plans for managing the solid waste management system over the next 5 years will remain very similar to the current operations. Lack of sufficient funding to make significant changes to the program and replace or add new equipment will basically result in the status quo for the next several years. One area the County will try to improve is the effort to increase participation in the business and industry waste

reduction/recycling reporting program through the First Tennessee Development District. In the coming years, the Chamber of Commerce, the Carter County Environmental Committee and municipal officials will work more closely with major businesses and industries in the Region to further expand the voluntary reporting program. This program is extremely important to the Region in their efforts to attain the 25% waste reduction goal using the “real time” calculation method. Secondly, a continuous paint recycling program and an e-waste recycling program should be implemented within the next 5 years to collect and eliminate electronics from the Class I waste stream and paint from the household hazardous waste stream. Although difficult and slow to progress at times, Carter County is taking the necessary steps to improve its solid waste/recycling program to more effectively meet the needs of the community over the next several years.

**Sources:**

U.S. Census Bureau

U.S. Bureau of Economic Analysis

ETSU Bureau of Economic Research

Tennessee Comptroller of the Treasury

Tennessee Department of Labor

First Tennessee Development District staff.

1999 Carter County Solid Waste District Needs Assessment Update

2001-2007 Carter County Annual Solid Waste Progress Report

Carter County Operating Budget document