

2008
WASHINGTON COUNTY
SOLID WASTE
DISTRICT
NEEDS
ASSESSMENT

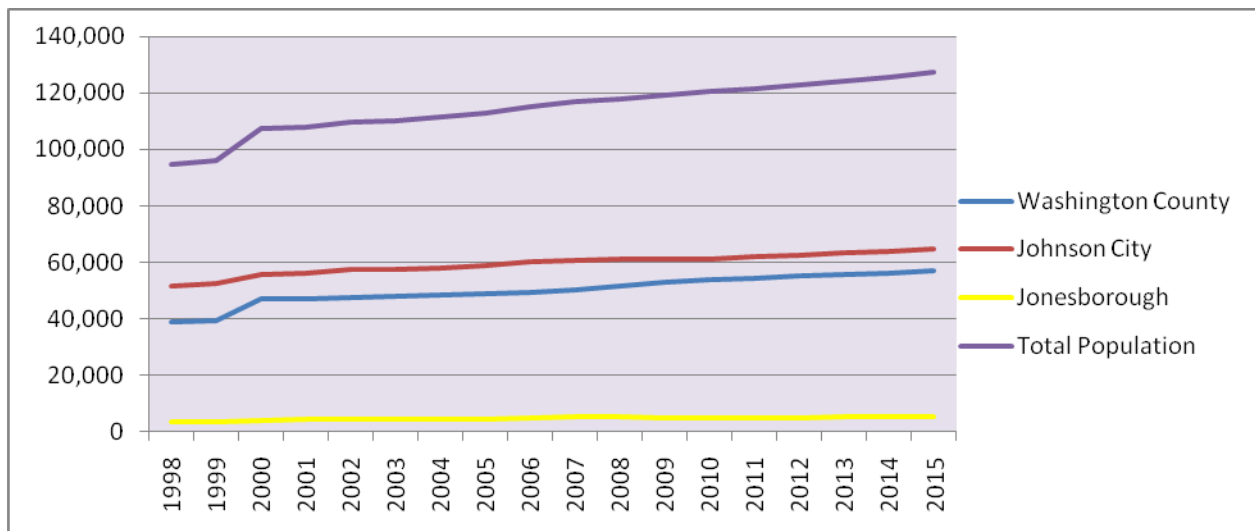


Prepared by
First Tennessee Development District

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	Washington County	Johnson City	Jonesborough	Total Population
1998	39,090	51,787	3,718	94,595
1999	39,461	52,483	3,858	95,802
2000	47,317	55,998	4,190	107,505
2001	47,273	56,150	4,254	107,677
2002	47,547	57,471	4,317	109,335
2003	48,157	57,649	4,407	110,213
2004	48,627	58,071	4,493	111,191
2005	49,062	59,104	4,558	112,724
2006	49,687	60,348	4,740	114,775
2007	50,583	61,028	5,046	116,657
2008	51,790	61,093	4,967	117,850
2009	52,997	61,158	4,888	119,043
2010	54,203	61,224	4,809	120,236
2011	54,709	61,956	4,807	121,535
2012	55,215	62,688	4,931	122,834
2013	55,720	63,420	4,993	124,133
2014	56,226	64,152	5,054	125,432
2015	57,228	64,887	5,115	127,230



Projected trends for the Washington County area including Johnson City and Jonesborough indicate that population will continue to increase over the next 5-7 years. Most likely, this increase will continue beyond 2015. While, total population and populations of Johnson and Washington County have experienced significant growth since 1998, the Town of Jonesborough’s growth has been a more steady increase.

In many cases population growth can put a strain on existing infrastructure such as solid waste, however all of the entities in the County have been well prepared for growth and maintained a superior level of service during this time period. Additional equipment, increasing capacity of drop-off sites and increasing collection routes are among the ways these local governments are managing population growth. Due to significant growth in the “western” section of Washington County mainly because of a new elementary school and industrial park, the County has been in preliminary discussions of constructing a new convenience center in this area to accommodate future growth. The current system is adequate to serve the existing population for the foreseeable future.

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:

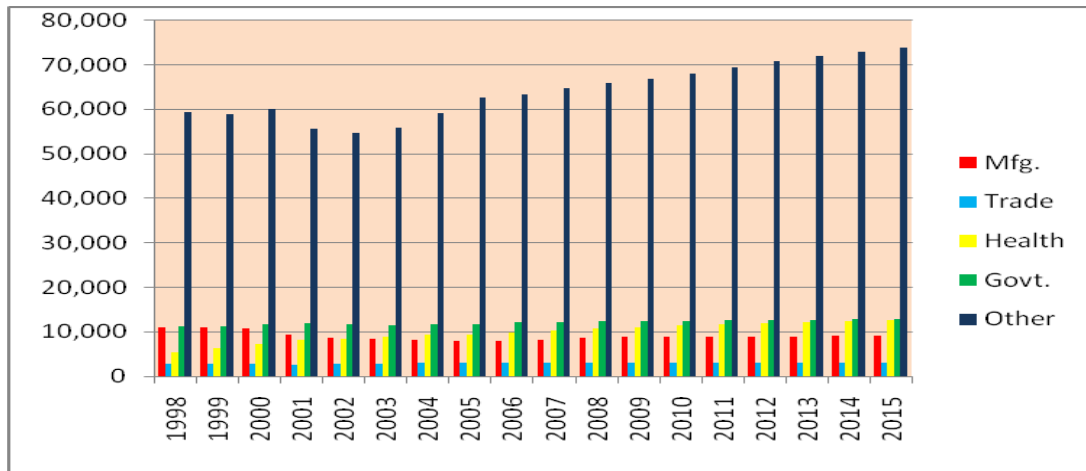
- Taxable sales, property tax generation, and per capita income
- Evaluation by break down of each economic sector
- County or municipal budgeting information
- Other commonly accepted economic indicators

Washington County, Johnson City & Jonesborough 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	50,210	1,740	3.30%	\$21,815	\$1,269,207,525
1999	51,030	1,920	3.60%	\$21,785	\$1,284,084,579
2000	53,120	2,250	4.10%	\$22,778	\$1,254,330,470
2001	52,650	2,700	4.90%	\$23,830	\$1,313,838,688
2002	52,680	3,040	5.50%	\$24,438	\$1,527,231,694
2003	53,320	2,960	5.30%	\$25,145	\$1,527,231,694
2004	54,450	2,910	5.10%	\$26,817	\$1,587,339,838
2005	55,210	2,850	4.90%	\$27,689	\$1,634,517,147
2006	57,160	2,680	4.50%	\$28,822	\$1,736,772,077
2007	57,855	2,774	4.62%	\$29,523	\$1,804,225,978
2008	58,538	2,859	4.72%	\$30,296	\$1,872,642,963
2009	59,079	2,920	4.78%	\$31,048	\$1,855,538,717
2010	59,722	2,942	4.80%	\$31,770	\$1,846,986,594
2011	60,426	2,952	4.87%	\$32,503	\$1,851,262,655
2012	61,137	2,953	4.91%	\$33,239	\$1,849,124,624
2013	61,806	2,957	4.93%	\$33,881	\$1,850,193,640
2014	62,465	2,968	4.93%	\$34,501	\$1,849,659,132
2015	62,996	2,997	4.97%	\$35,069	\$1,849,926,386

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.

The following table illustrates the breakdown of employment characteristics of non-farm related jobs in Washington County which includes Washington County residents as well as residents commuting to Washington County for employment. This table includes both service industry jobs and goods producing jobs. Most jobs in Washington County are in the goods producing category, primarily manufacturing.



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.

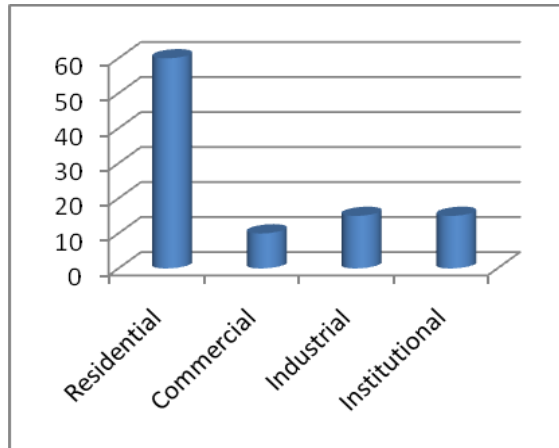
Item #3

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.

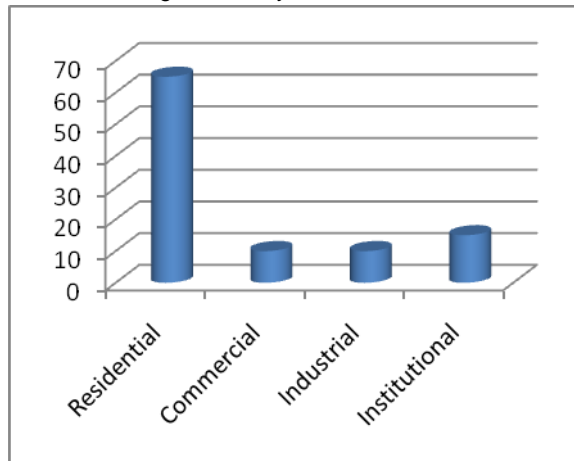
As is the case in most counties in the State, Washington County’s waste stream is primarily from residential sources. In 1999, residential sources accounted for nearly 60% of the total waste stream. This increase to nearly 70% in 2007 and is project to remain near or above 70% for the next five years. All the residential waste stream is handled by public entities and therefore none is collected by private haulers. Washington County and Johnson City is unique in the handling and collection of solid wastes. Johnson City also collects all of the industrial waste in and outside of the City limits, not including Jonesborough. Johnson City has exclusive rights to collection in the “Johnson City Regional Solid Waste System” boundaries since the 1960’s.

Washington County has a complete and comprehensive special waste management collection program. Used oil, batteries, latex paint and electronics are collected at each of the County's 5 convenience centers. Latex paint and electronics are processed at the County's materials processing facility in Gray. Washington County was one of the first County's in the area to implement a paint and electronics recycling program. The HUB Waste Tire Recycling Center is operated by Washington County and provided waste tire collection and recycling services for 6 counties in Northeast Tennessee. This program was the first HUB tire collection program in the State and is routinely used as an example for other counties. There are virtually no wastes leaving Washington County due to the presence of Iris Glen Environmental Center in Johnson City. However, because of this "regional" landfill, a majority of the waste disposed in the landfill is coming from outside Washington County.

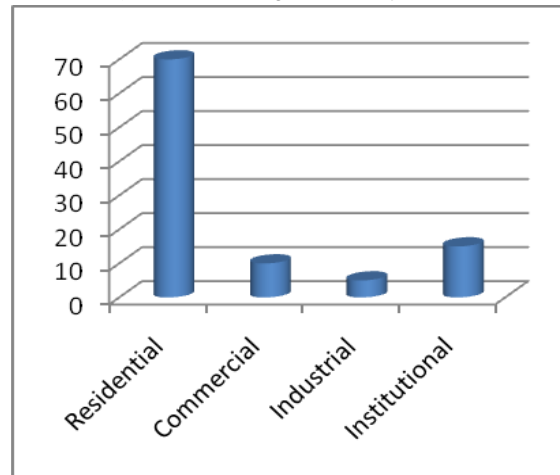
1999 Washington County Estimated Waste Stream



2007 Washington County Estimated Waste Stream



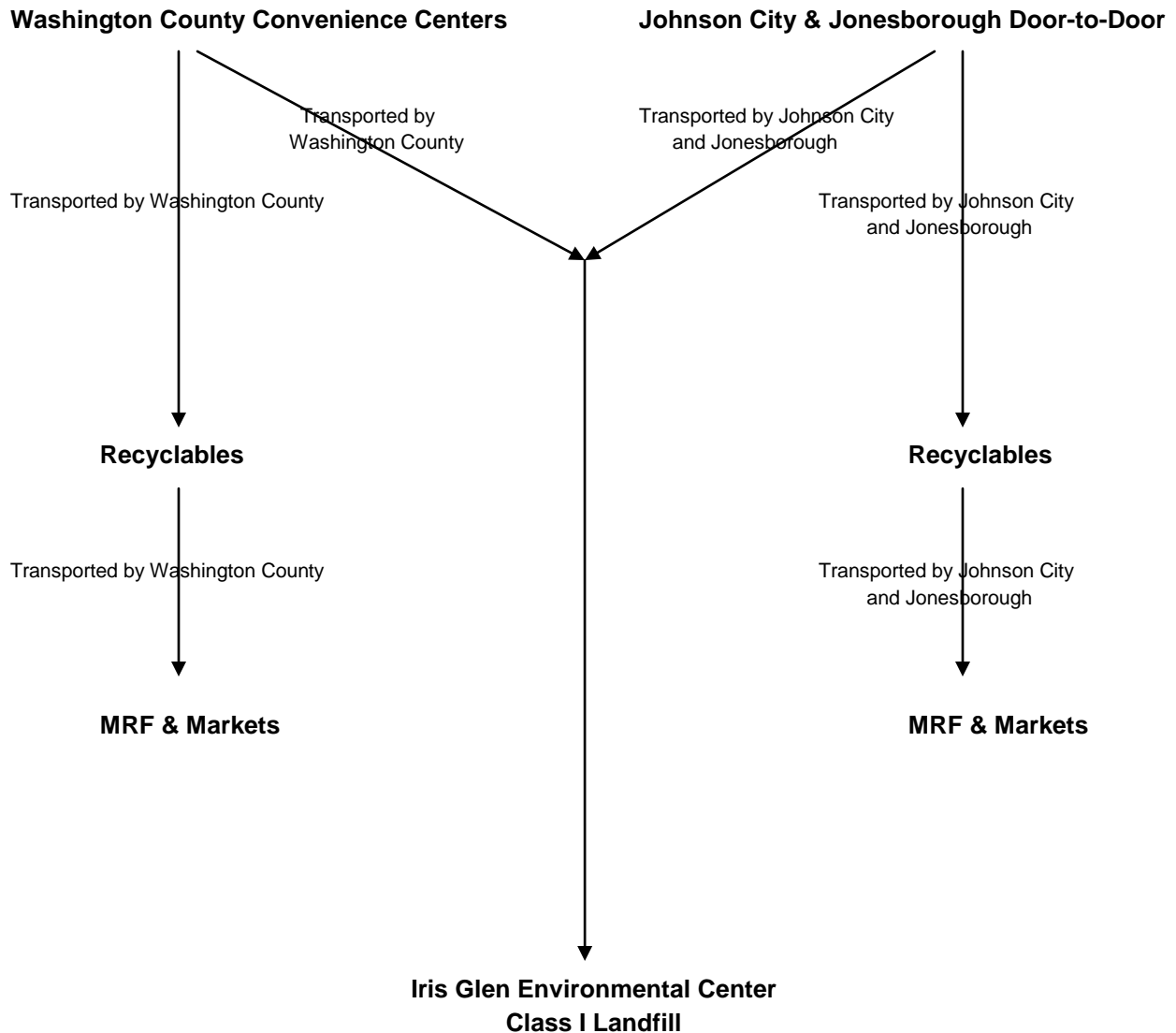
2012 Projected Washington County Waste Stream



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.

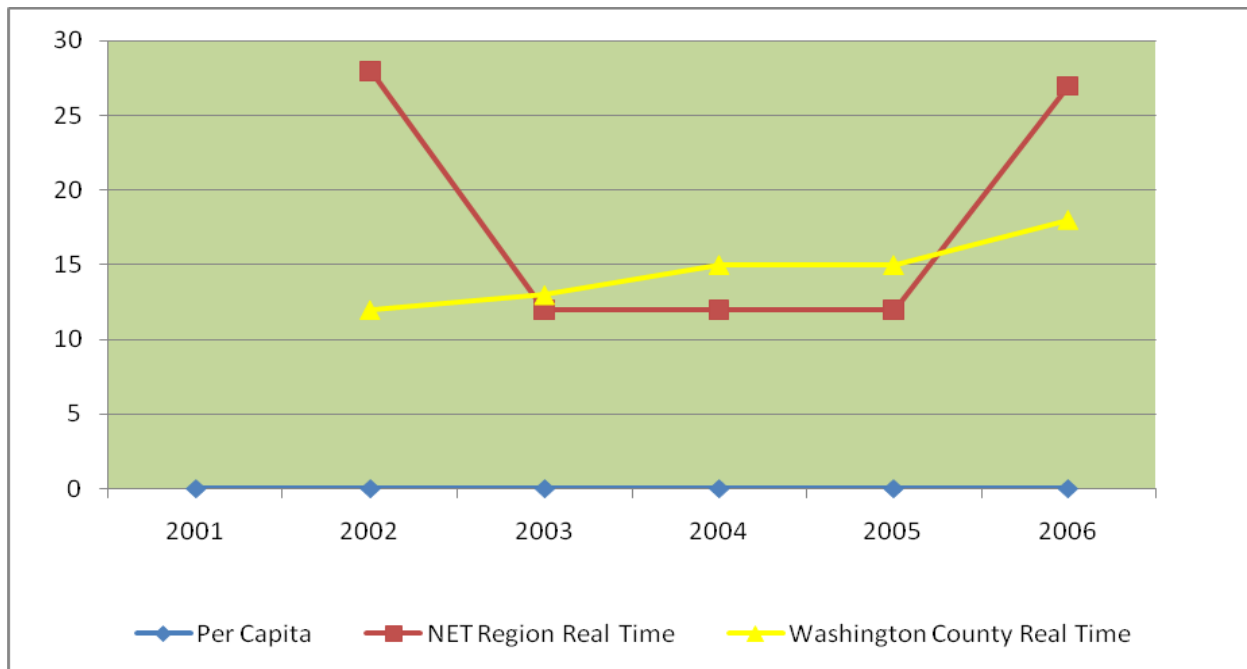
There are 2 municipalities in Washington County that provide door-to-door collection of solid wastes as well as recyclables. Johnson City provides service to approximately 58,700 residents every week while the Town of Jonesborough provides service to almost 5,000 residents each week. Washington County's network of staffed convenience centers provides service the remainder of the County's population which is about 112,000 people. All of the solid waste collected in Washington County, either door-to-door or at drop-off sites is landfilled at the Iris Glen Environmental Center in Johnson City. This facility is operated by Waste Management and is owned in partnership with the City of Johnson City. Washington County, Jonesborough and Johnson City are among the initial users of the landfill which was constructed in 1993-1994. Outside of the city limits of Jonesborough and Johnson City, the City of Johnson City has exclusive rights to solid waste collection services and therefore no private haulers are permitted to collect household waste in the County. The following flow diagram indicates the flow of solid waste and recyclables from initial collection points to eventual end-points. As can be seen, all recyclables collected in the County are processed by either the City of Johnson City or Washington County, both entities operate Materials Processing Facilities. Johnson City implemented the first curbside collection of recyclables in the State of Tennessee.



Overall, the solid waste management system, including recycling, in Washington County can be regarded as one of the most efficient and cost effective in the State. The public/private partnership between Johnson City and Waste Management was extremely unique and has proved to be financially and environmentally beneficial to both parties. Jonesborough and Washington County's program are also extremely successful in meeting the current and future needs of the community. Although not included in the discussion of solid waste disposal, Johnson City and Jonesborough also operated yard waste and composting diversion programs that are responsible for diverting several thousand tons of materials from the class I landfill each year.

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.



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

Year	Current Year Disposal	Base Year Disposal	Per Capita Waste Reduction Rate	NET Region Real Time Comparison	Washington 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%	12%
2003	222,202 tons	150,983 tons	-33%	12%	13%
2004	233,842 tons	150,983 tons	-39%	12%	15%
2005	237,539 tons	150,983 tons	-40%	12%	15%
2006	236,613 tons	150,983 tons	-38%	27%	18%

Since 2001, Washington County individually has not met the 25% waste reduction goal. Washington County is a founding member of the Northeast Tennessee Solid Waste Planning Region, which consists of Carter, Johnson, Unicoi and Washington Counties. The Region has been successful in meeting the goal twice since 2001 using the “real time” calculation method. If evaluated independently, Washington County has failed to meet the goal using either method the last 6 years. This 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.

Washington County along with other members of 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 100 businesses and industries are surveyed each year by the Development District. Unfortunately, if participation is low, the percentage of waste reduction is also low.

There are very few reasonable infrastructure improvements that can be made in Washington County that will make a significant improvement in the County’s efforts to attain a 25% waste reduction. Of the counties this size, Washington County (Johnson City and Jonesborough) is arguably leading the State in public recycling opportunities, composting efforts and yard waste diversion programs. At this time, costs far outweigh the benefits of any infrastructure improvements that might be made to increase waste reduction totals. Johnson City, Jonesborough and Washington County have made reasonable, sensible and fiscal decisions to expand and evolve their respective waste reduction programs, because of this effort they are experiencing a high level of waste reduction activity at the least risk possible to taxpayer funds.

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.

<i>Site Name</i>	<i>Current Capacity</i>	<i>Maximum Capacity</i>	<i>Projected Life of Facility</i>
Cash Hollow Convenience Center	75 tons per month	150 tons per month	25 years
Washington College Convenience Center	100 tons per month	200 tons per month	25 years
Locust Mount Convenience Center	65 tons per month	120 tons per month	25 years
Gray Convenience Center	155 tons per month	325 tons per month	25 years
Lamar Convenience Center	120 tons per month	240 tons per month	25 years
Iris Glen Environmental Center (Waste Management)	1,400 tons per day	Depends on expansion plans and customer levels.	17 years

Washington County recently researched several options for diverting Class III/IV waste from the Class I waste stream that is currently landfilled at Iris Glen Environmental Center. The County has the capacity and infrastructure to separate this material at each of the Counties 5 convenience center and divert to Class III/IV facilities in the area. However, due to transportation costs and the unwillingness of facilities to accept out-of-county waste, Washington County continues to landfill C/D materials in a Class I landfill. This is a shortfall in the system that begins at the collection level and ends at the disposal level. Although county officials are interested in the idea of diverting this material to a less costly disposal facility, currently this goal cannot be achieved.

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>
Washington County	County-wide	112,000	Anytime during hours of operation	13,000 tons/year	5 Convenience Centers
Jonesborough	City Limits	4,550	Weekly		Curbside
Johnson City	City Limits and Regional System Boundaries	58,700	Weekly		Curbside

Private Haulers are not permitted in the Johnson City Regional Solid Waste System boundaries which include the City of Johnson City limits and Washington County.

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.

Expenditures			
<i>Description</i>	<i>Present Need \$/year</i>	<i>Unmet Needs \$/year</i>	<i>Total Needs (Present + Unmet) \$/year</i>
Salary and Benefits	\$571,826	\$0	\$571,826
Transportation/hauling	\$628,000	\$0	\$628,000
Collection and Disposal Systems			
Equipment	\$0	\$0	\$0
New Roll-Off Truck(Washington County)	\$0	\$125,000	\$125,000
New Collection Equipment(Johnson City)	\$0	\$250,000	\$250,000
Sites	\$0	\$0	\$0
Convenience Center	\$650,627	\$0	\$650,627
New Convenience Center(Washington Co)	\$0	\$100,000	\$100,000
Transfer Station	\$0	\$0	\$0
Recycling Center	\$0	\$0	\$0
New Fork Lift(Washington County)	\$0	\$35,000	\$35,000
MRF	\$0	\$0	\$0
New Building(Jonesborough)	\$0	\$200,000	\$200,000
Landfills			

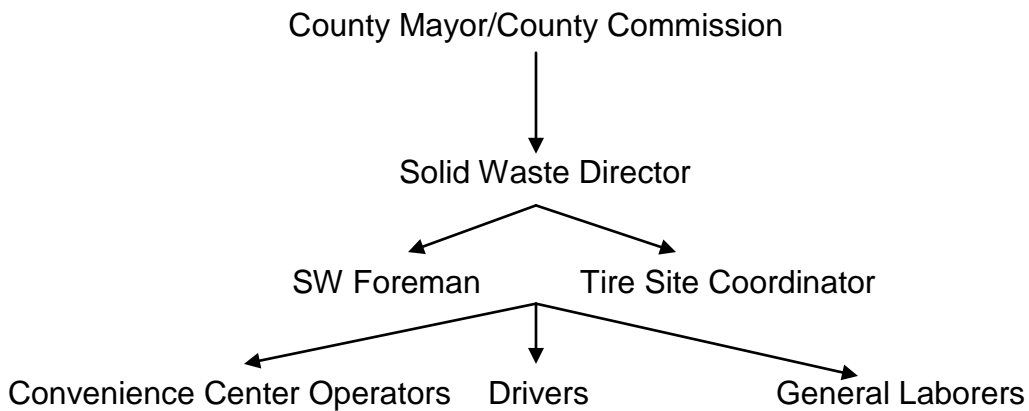
Site	\$0	\$0	\$0
Operation	\$0	\$0	\$0
Closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$0
Administration (supplies, comm. costs, etc.)	\$187,838	\$0	\$187,838
Education			
Public	\$0	\$0	\$0
Continuing Ed.	\$0	\$0	\$0
Capital Projects	\$0	\$0	\$0
REVENUE			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$1,142,535	\$0	\$1,142,535
Sales tax	\$0	\$0	\$0
Surcharges	\$0	\$0	\$0
Disposal Fees	\$110,000	\$0	\$110,000
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$0	\$0	\$0
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0	\$0	\$0
Sale of Methane Gas	\$0	\$0	\$0
Other sources: (Grants, bonds, interest, etc.)	\$290,000	\$0	\$290,000

Currently all of the new capital expenditure needs in Washington County, Johnson City and Jonesborough that have been identified do not have adequate funding to meet these needs. In the event, this equipment is purchased or building projects are initiated, “unmet” financial needs will be addressed. All of these communities are committed financially to ensuring that their solid waste programs are properly equipped and designed to meet the needs of the community.

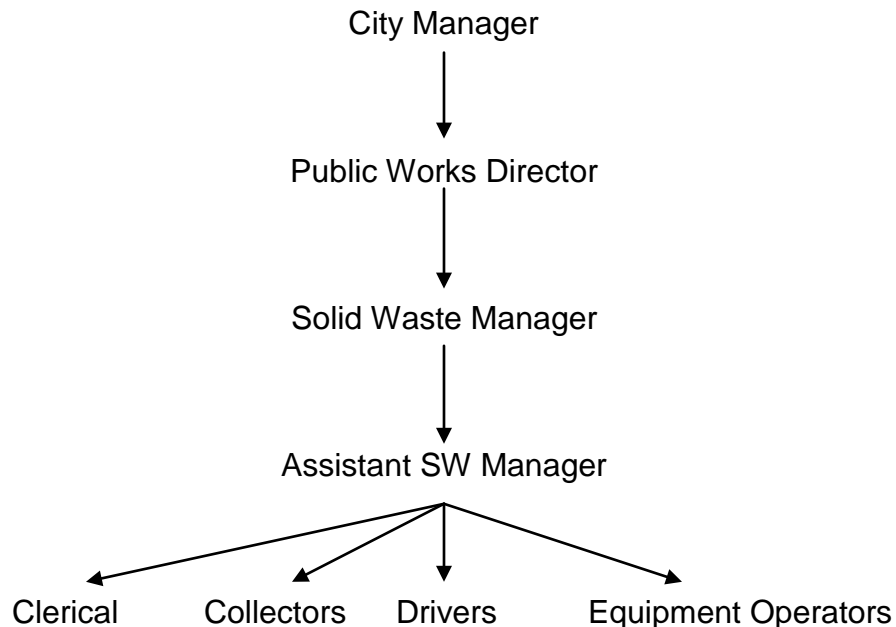
Item #8

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.

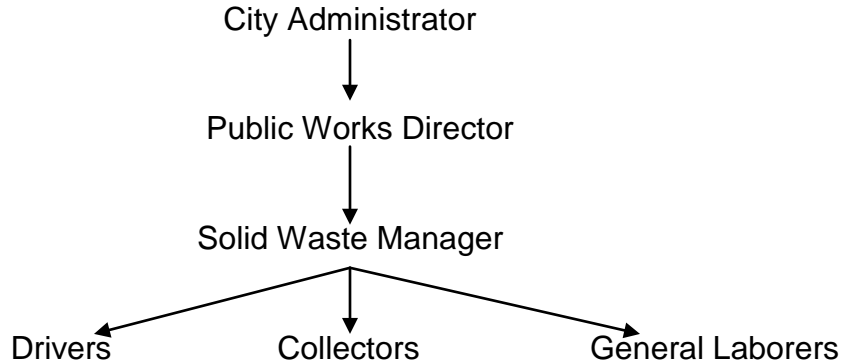
***Washington County
Solid Waste Department Organizational Chart***



***Johnson City
Solid Waste Department Organizational Chart***



**Jonesborough
Solid Waste Department Organizational Chart**



Currently there are no identifiable staffing needs in either of the communities, including Washington County. Obviously, additional staff is always a desire of every solid waste program in the State, however in Washington County, none of the programs are performing below adequate standards due to staffing deficiencies. An in depth review of the solid waste facilities, special waste disposal sites, recycling drop-off sites, etc, shows that Washington County is a model for other counties across the state to emulate. After a thorough review of the facilities available to residents, there appears to be no shortcomings in service in the County. As mentioned earlier, a proposed new convenience center in the western section of Washington County is under consideration by solid waste officials. This however, is not because of a lack of service but is to address potential population growth in western Washington County. A scale map with locations of all solid waste/recycling facilities in the County identified, is attached.

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.

Community	Current Revenue Source
Washington County	Property Taxes
	Waste Tire Tipping Fees
	Grants
	Sale of Recyclables
Johnson City	Property Taxes
	Collection Fees
	Sale of Recyclables
Jonesborough	Property Taxes
	Sale of Recyclables
	Collection Fees

Future Solid Waste Management Needs (5 year projection)

Community	Equipment	Estimated Costs	Potential Revenue Source
Washington County	Convenience Center	\$100,000	Grants/Property Tax
	Roll-Off Truck	\$125,000	Grants/Property Tax
	Fork Lift	\$35,000	Grants/Property Tax
Jonesborough	MRF Building	\$200,000	Grants
Johnson City	Collection Equip.	\$250,000	Grants/Property Tax

While residential property taxes are a major part of funding all solid waste programs in the County, each local government will rely heavily on grants from the State to supplement purchases. Without grants for solid waste equipment and or significant construction projects, Washington County, Johnson City and Jonesborough will not be adequately able to meet solid waste management needs over the next 5 years. County officials feel there must be more solid waste equipment and infrastructure grants available to meet the needs of deteriorating equipment and facilities.

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?

Over the past 5 years, Washington County residents have embraced the County’s recycling program and waste reduction program, including paint and electronics, wholeheartedly. It is difficult to determine actual participation rates in the drop-off program but approximately 1 out of 2 convenience center users participate in some form of recycling. Participation rates in the Johnson City and Jonesborough curbside programs are approximately 65% of households. Officials have seen a slight trend upward in the number of participating households during the last few years. In the last few months the City of Johnson City hired a full-time recycling marketing specialist to further develop and increase participation in the City’s program. This education program along with the programs Washington County offers through Keep Washington County Beautiful, local governments are constantly making efforts to change attitudes in the community towards recycling and waste reduction.

No additional measures are planned to change citizen's behaviors except to continue existing educational programs and enhance these programs for a changing demographic. The most important behavioral change addressed in these educational programs is to educate the younger generation on the importance of reducing our dependence on landfilling. Furthermore, residents are reminded of the taxes saved by the amount of recycling produced.

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.

Washington County's plans for managing the solid waste management system over the next 5 years will remain very similar to the current operations. Two exceptions will be the County's efforts to increase participation in the business and industry waste reduction/recycling reporting program through the First Tennessee Development District and possible construction of a new convenience center in the western section of the County. In the coming years, Washington County 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.

Plans to construct a new convenience center are very preliminary at this time. Funding for this project is not currently available nor is an appropriate location for this facility. However, solid waste staff recognize a new center will likely be necessary in the next 5 years to accommodate population growth in this area of the Region. Certainly, this new center will also provide recycling opportunities and special waste collection sites for residents.

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 Washington County Solid Waste District Needs Assessment Update
2001-2007 Washington County Annual Solid Waste Progress Report
Washington County Operating Budget document
Jonesborough Town Budget document
Johnson City Budget document

