

# SOUTHEAST TENNESSEE MUNICIPAL SOLID WASTE REGION

## HAMILTON COUNTY

### SOLID WASTE NEEDS ASSESSMENT



SEPTEMBER 2009

## **INTRODUCTION**

The Solid Waste Management Act of 1991 (SWMA) was written to avert extreme financial hardships that could have occurred if small local governments were suddenly required to upgrade landfills to meet Resource Conservation and Recovery Act (Subtitle D) regulations. Rules were promulgated by the Tennessee Department of Environment & Conservation to implement Subtitle D included provisions requiring landfill operators to line facilities with impermeable clay and synthetic materials; install leachate collection systems and monitoring wells; and provide thirty years of post-closure care. These were, at the time, extremely expensive changes in the development and operation of disposal facilities, and there was fear in the legislature that some counties would not have a disposal option.

In order to ensure that local governments were protected from high costs and lack of disposal capacity, the SWMA promoted regional landfills, an attempt to guide small counties into alliances with other counties. Theoretically, small counties would form a regional board that would then settle on a disposal site, and each local government would share in the cost of operation. The law even has a provision that would allow local governments to require all entities within their respective jurisdictions to dispose of their waste at the regional landfill. The premise behind the latter concept proved to be unconstitutional (see *Carbone vs Clarks City*, U.S. Supreme Court, May 1994). While acknowledging that the flow control provision existed, no county in the State was willing to pledge public funds to facilities that may not receive enough waste to garner the tipping fees needed to meet costs.

During the same period in the early 1990s, the Tennessee Valley Authority was exploring ways to integrate solid waste into fuel supply systems at power plants that had the existing technology to properly combust waste material. One of these plants was located in Kingston, and local officials became interested in combining their respective waste streams, closing most of their landfills, and hauling everything to a waste-to-energy facility.

Engineers working with TVA had prepared studies for other power plants and suggested the Watts Bar site as an alternative because two moth-balled fossil fuel plants are located there. The engineers recommended installing a companion boiler system that would utilize existing infrastructure and reduce the haul distance for all southeast Tennessee counties. Other infrastructure planned for the site included a materials recovery facility (MRF), which would have diverted enough material to meet the SWMA waste reduction goal. This situation was the catalyst for the formation of the Southeast Tennessee Municipal Solid Waste Planning Region, which included all of the counties within the Southeast Tennessee Development District<sup>1</sup>.

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<sup>1</sup> The Southeast Tenn. Municipal Solid Waste Planning Board is composed of Hamilton, Bradley, Grundy, Hamilton, Marion, McMinn, Meigs, Polk, Marion, and Hamilton Counties.

Without the flow control provision, commitments from all counties and cities were vital in bringing this project to fruition.

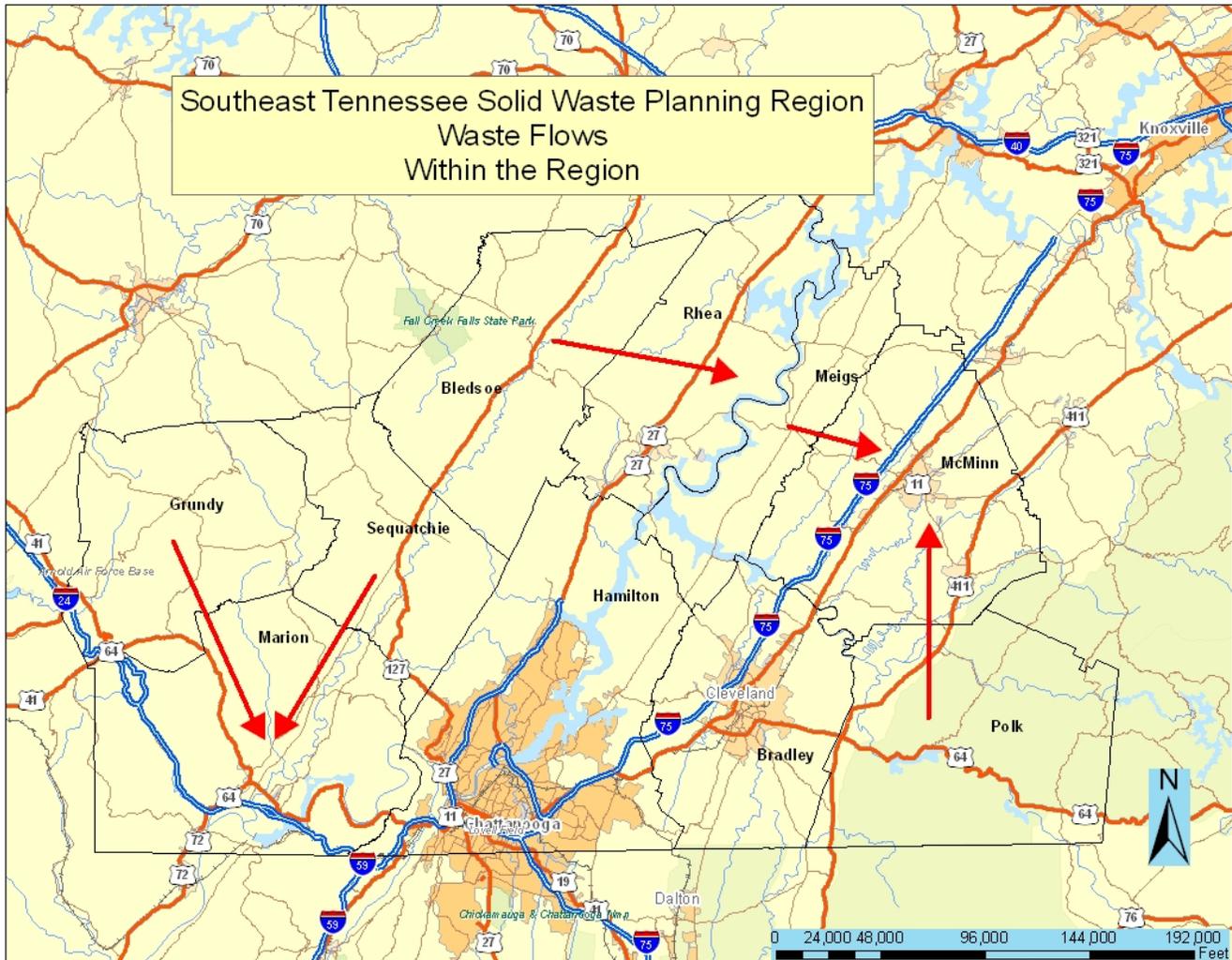
After the completion of studies funded by TVA, the utility lost interest in the project. No official reason was ever conveyed, but the decision was probably based on the fact that any emissions from the proposed plant would have a potential impact on the Cherokee National Forest and the Smokey Mountain National Park. TVA's involvement in the project was crucial because the utility had existing infrastructure and would have bought the steam produced by the plant. Tipping fees would have been a reasonable \$35 per ton, including MRF operations. Without TVA, the Board could not finance a stand-alone facility because tipping fees would have reached \$100 or more, far above existing landfill disposal costs.

The failure to implement the waste-to-energy project did not deter the Board from remaining a regional planning entity. Board members were comfortable with the situation and wished to remain together in the event that other regional opportunities arose.

Saving landfill space was a primary goal of the SWMA. Many experts believed early on that the cost per ton of garbage would be in the \$40 - \$90/ton range at Class I facilities. Consequently, recycling, waste diversion, and saving landfill space became paramount goals. High tipping fees failed to materialize, however, as competition and economies of scale drove down development costs. Subsequently, many cities and counties found themselves with expensive recycling and waste diversion programs. Studies by several jurisdictions showed costs of \$280+ to recycle a ton of waste material versus \$25-\$28 dollars to simply dump it in the landfill. It is no surprise that many cities dropped their recycling programs (they weren't required by law to have one in any case) and shifted most of the burden to county governments, which were required to meet SWMA goals. There was no crises, no shortage of landfill space, and most of the landfill operators were marketing their space to any and all, inside of Tennessee or out, in the region or not. The more waste coming into the landfill, the more money is made for the operators. Few landfill operators were (or are) working diligently to save space; they are generally selling as much space as possible for the best price.

In Southeast Tennessee there are six (6) operating Class I Landfills. SANTEK Environmental, Inc. operates two of these facilities for Bradley and Rhea Counties respectively. SANTEK can generally landfill all of the waste that it can attract to either landfill, some of it from Georgia. In return, the counties get reduced or no disposal costs, income from disposal operations, and assistance with programs, including the State's Household Hazardous Waste collection events.

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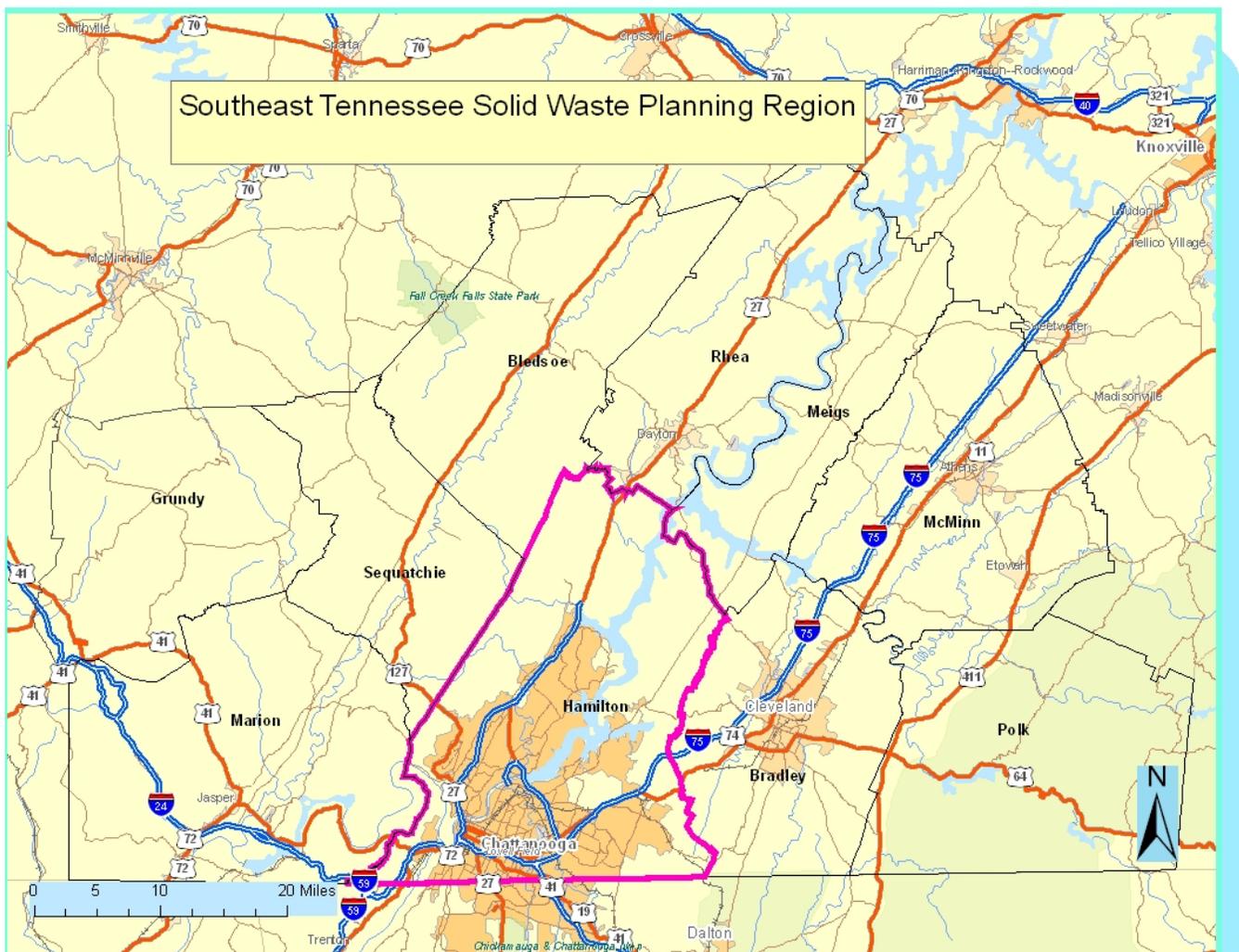
Meadow Branch, a private landfill located in McMinn County, provides disposal for several counties in East Tennessee, including several outside of the region. McMinn County receives a host fee for Meadow Branch, and operates its own landfill, which also accepts waste from outside the region.

Marion County's landfill is operated by an Authority. Like the other landfills, waste is accepted from any source. In the past, landfill operators have received waste from Dade County, Georgia, Jackson County, Alabama, and both Hamilton and Franklin Counties in Tennessee. The landfill routinely accepts all of Grundy and Hamilton County's waste.

Chattanooga operates the sixth landfill in the region. It is a facility that originally belonged to Hamilton County, but when the city's Summitt Landfill was closing, the city and county came to an agreement that allowed Chattanooga to own and operate the landfill. This landfill could accept waste from other areas, but there are currently no customers. A large proportion of the Chattanooga/Hamilton County waste stream, over 200,000 tons annually, goes to an Allied Waste landfill located in northern Alabama.

The original solid waste assessment for the entire region advocated sub-regions composed of natural “waste sheds.” In reality, these sub-regions have occurred, essentially as predicted, based on the economics of waste generation, hauling distance, etc. As the previous map indicates, these sub-regions consist of county groupings as follows: Rhea and Bledsoe; Meigs-McMinn-Polk; Bradley County; Hamilton County; and Marion-Grundy-Sequatchie.

The following is a detailed description of Hamilton County’s waste collection, diversion, and disposal system and how these programs function in relation to other parts of the Region. Every attempt has been made to provide an objective assessment of the County’s infrastructure and program needs based on the legal requirements of the SWMA.



## SECTION 1: DEMOGRAPHIC INFORMATION

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.

**Table 1.1 Historic Population**

Year	Population	% Increase
1950	208,255	13%
1960	237,905	12%
1970	255,077	7%
1980	287,643	11%
1990	285,536	-1%
2000	307,896	7%

Source: U. S. Census Bureau data and population estimates, and The National Bureau of Economic Research, *Decennial County Population Data, 1900-1990*, April 25, 2007.

Hamilton County's population has gradually increased after a slight reduction in the 1980s, which was likely the result of the recession early in the decade; out-migration to neighboring Georgia counties; and a movement away from heavy manufacturing, which changed the demographic composition of the county to some degree. Growth in the non-manufacturing sectors of the economy preceded the resurgence in population growth that has carried on through the present.

**Table 1.2 Population Projections**

Hamilton County Population Estimates

Year	Population										
	Total County	Chattanooga	Collegedale	East Ridge	Lookout Mountain	Red Bank	Signal Mountain	Soddy-Daisy	Walden	Municipal	Non-Municipal
1997	304,723	157,690	6,409	20,378	1,995	12,390	7,178	9,988	1,930	217,958	86,765
1998	305,100	157,823	6,477	20,400	1,996	12,405	7,209	10,120	1,938	218,368	86,732
1999	306,888	157,988	6,505	20,422	1,998	12,400	7,368	10,900	1,944	219,525	87,363
2000	307,896	155,554	6,514	20,640	2,000	12,418	7,429	11,530	1,960	218,045	89,851
2001	313,762	160,878	6,542	21,172	2,000	12,879	7,854	10,809	1,959	224,094	89,669
2002	315,687	161,562	6,651	21,186	2,003	12,908	7,957	10,927	1,992	225,186	90,501
2003	317,612	162,247	6,760	21,201	2,005	12,937	8,059	11,044	2,026	226,278	91,334
2004	319,537	162,931	6,869	21,215	2,007	12,966	8,161	11,161	2,059	227,369	92,167
2005	321,461	163,615	6,978	21,230	2,010	12,994	8,263	11,279	2,092	228,462	92,999
2006	323,386	164,300	7,087	21,244	2,016	13,023	8,366	11,396	2,126	229,557	93,829
2007	325,311	164,984	7,196	21,259	2,022	13,052	8,468	11,513	2,159	230,653	94,658
2008	327,236	165,668	7,305	21,273	2,027	13,081	8,570	11,631	2,192	231,748	95,488
2009	329,160	166,353	7,414	21,287	2,033	13,110	8,672	11,748	2,226	232,843	96,317
2010	331,085	167,037	7,523	21,302	2,039	13,139	8,775	11,866	2,259	233,938	97,147
2011	333,010	167,722	7,631	21,316	2,045	13,168	8,877	11,983	2,292	235,034	97,976
2012	334,935	168,406	7,740	21,331	2,050	13,197	8,979	12,100	2,326	236,129	98,805

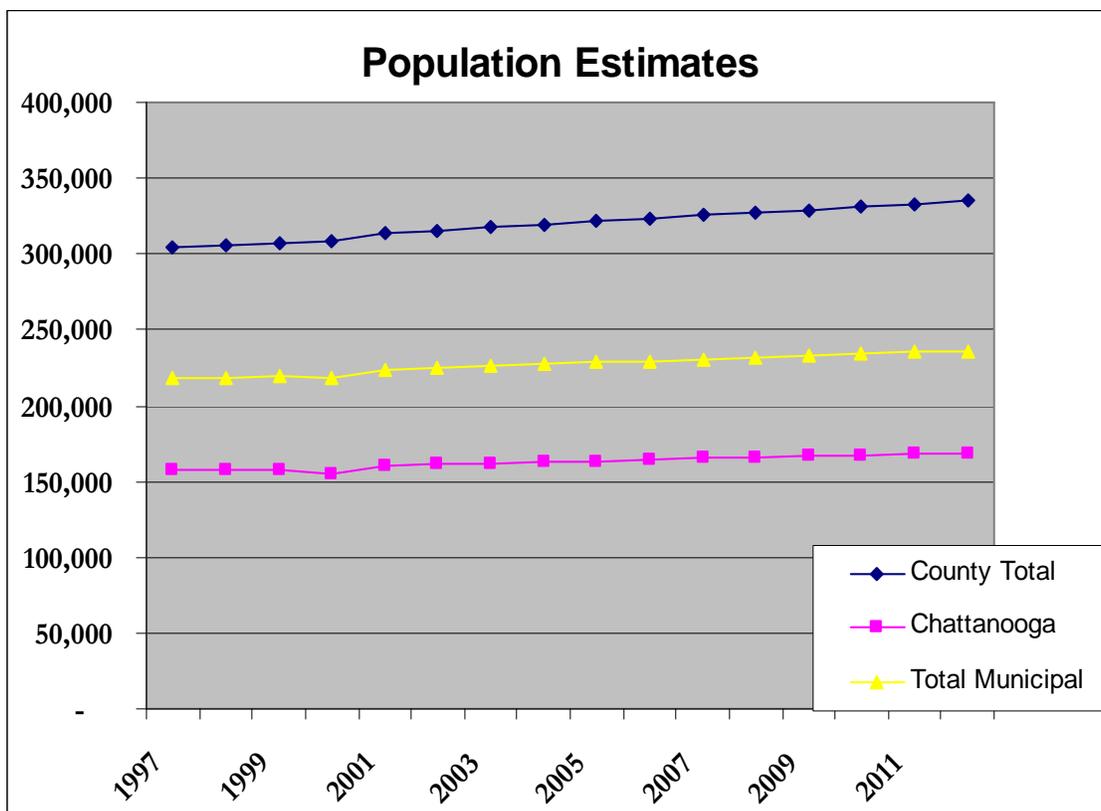
Sources: Historic statistics are derived from U.S. Census Bureau data.

Projections are derived from a least squares model of population growth.

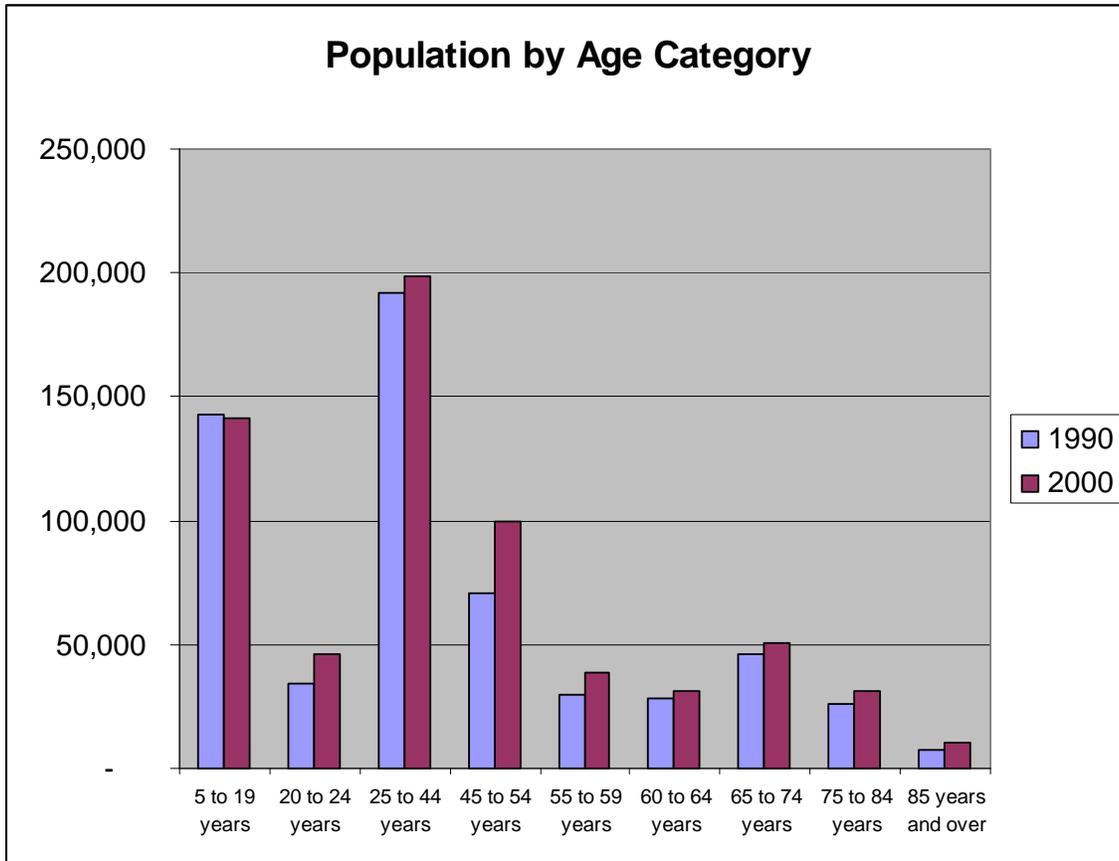
From the last census in 2000 to the latest 2007 population figures published by the American Community Survey (U.S. Census Bureau), the municipal population grew by about 5.5% while the non-municipal grew by 5.1%. However, these figures can be misleading because neighboring rural counties grew at a much higher rate, reflecting a spill-over of families moving to low-density areas where cheap land and limited land use regulations are attractive. These people work and shop in Hamilton County but have their residence in peripheral areas. As an example, Sequatchie County, which is adjacent to the northern sections of Hamilton County, grew from 11,370 people in 2000 to 13,580 in 2008, and between 1990 and 2008, the county grew by 53.2%. This growth was driven by a four lane, limited access highway that made Hamilton County accessible.

Currently, the U.S. economy is in the midst of a deep recession. Although this economic downturn is severe, Hamilton County's economy includes diverse employment base that helps maintain a level of business development unavailable to rural counties. As a result, the following trend lines show a consistent gain over the next few years.

**Figure 1.1**



**Figure 1.2**



**Source: U.S. Census Bureau, 2008.**

The 25-44 year old group in Figure 1.3, which is the largest component of the population, will have moved as a large wave to fill in the older age brackets. It is obvious that the population must currently contain a much higher number of people in late middle age and older. This has significant consequences for the workplace, health care, and the choices people make about where they live. This, in turn, will impact the quantities and types of waste that will be produced now and in the future.

Over the past several years, many retired people have found that southeast Tennessee is a great retirement area. Those who moved from northern states to Florida have become increasingly concerned about high insurance rates associated with Florida's location in the tropical storm belt, and they miss the change of seasons. This area is ideal because the climate is temperate, taxes are low, and people moving into the area can get much more for their housing dollar. All southeast Tennessee counties have benefited from the so called "half-back" immigrants: People who move from northern, snow-belt states to Florida and then move half way back.

Problems in the housing market are likely to change this trend significantly. People who own homes are finding it difficult to sell because there are so many houses on the market. As the South Florida Sun-Sentinel reported on April 3, 2008, "*Florida foreclosure activity grew by*

more than 63 percent in February from the previous month, giving it the nation's third-highest state foreclosure rate with one foreclosure filing for every 382 households". With this many homes on the market, anyone wishing to sell and move to a different locality will probably be unable to do so. The foreclosure rate has continued to increase, and the market has not reached the bottom. Until then, a large proportion of "half-backs" will not be financially able to relocate, and there is little likelihood that this particular population will impact growth in the region.

## SECTION 2: 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.

**Table 2.1**

**Chattanooga Area MSA  
Employees  
(1,000's)**

	1996	2000	2006	1996-2006 Difference	Percent Difference
Manufacturing	42.6	45.0	35.2	-7.4	-17.4%
Transportation	9.0	20.7	20.0	11.0	122.2%
Education & Health Services	18.7	20.7	25.1	6.4	34.2%
Government	35.7	33.5	35.6	-0.1	-0.3%
Information	2.7	3.0	2.6	-0.1	-3.7%
Finance	9.3	9.0	9.1	-0.2	-2.2%
Leisure & Hospitality	17.2	17.3	20.0	2.8	16.3%
Professional & Business Services	7.3	7.4	8.7	1.4	19.2%
Retail Trade	28.1	26.7	27.0	-1.1	-3.9%
Wholesale Trade	9.3	9.0	9.1	-0.2	-2.2%
Mining & Construction	9.7	10.4	10.6	0.9	9.3%

As is obvious from the preceding, transportation companies and professional services grew while manufacturing receded. The ten-year period between 1996 and 2006 saw a loss of 7,400 manufacturing jobs as many companies moved overseas although the markets for the goods produced overseas remained in the U.S. As a result, transporting goods became more important, and that is reflected in the statistics: 11,000 transportation-related jobs were created in the Metropolitan Statistical Area, and that essentially overcame the large losses in manufacturing. This helped maintain population growth at a consistent rate.

**Table 2.2 Economic Profile**

Year	Total	Employment	Unemployed		Per Capita Income	Retail Sales (\$1,000's)	Total Bank Deposits (millions \$)
			Total	Percent			
1997	145,660	138,440	7,220	5.0%	25,440	3,600,000	3,501
1998	147,970	142,500	5,470	3.7%	26,766	3,717,000	3,581
1999	153,080	148,060	5,020	3.3%	28,392	3,937,000	3,501
2000	160,660	155,250	5,410	3.4%	29,815	4,101,416	3,709
2001	158,960	153,100	5,860	3.7%	29,892	4,168,687	3,752
2002	157,990	151,060	6,930	4.4%	30,406	4,171,329	3,931
2003	156,690	149,520	7,170	4.6%	31,195	4,365,448	4,174
2004	156,400	149,240	7,160	4.6%	32,224	4,700,393	4,642
2005	157,480	150,030	7,450	4.7%	33,494	4,942,892	4,895
2006	162,370	155,260	7,110	4.4%	35,300	5,328,368	5,190
2007	165,970	159,190	6,780	4.1%	36,943	5,468,540	5,356
2008	167,560	158,310	9,250	5.5%	25,753	5,438,410	5,432
2009	166,410	152,640	13,770	8.3%	26,048	5,278,300	5,318
2010	166,820	152,100	14,720	8.8%	26,342	5,100,000	5,221
2011	167,100	153,200	13,900	8.3%	26,637	5,320,900	4,988
2012	168,320	156,700	11,620	6.9%	26,931	5,440,210	5,210

**Sources:** Historic employment data, U. S. Dept. of Labor; Per capita income data, U.S. Bureau of Economic Analysis; Retail data, Tenn. Dept. of Revenue; Bank deposits, FDIC.

**All state and local area dollar estimates are in current dollars (not adjusted for inflation). Projections: SETDD staff, Dec. 2008.**

Projections of employment from 2009 to 2012 assume an economic recovery trailed by an increase in industrial employment. In that case, the unemployment rate is likely to maintain at a higher level than the pre-2007 trend, but the upward movement is (hopefully) arrested and begins to decline by 2012. The lower unemployment estimate is also based on the new Volkswagen assembly plant in northern Hamilton County that should open by 2012 and employ up to 2,000 workers in the primary plant and many others in the automotive supply sector.

There is a great deal of uncertainty associated with the current economic situation in the world. The conditions that brought about increased globalization may have reached their limit of expansion and contraction may be imminent. Stubbornly high oil prices, despite a reduction in use due to the economic downturn, are forcing companies to rethink locating to other countries where transportation costs could reduce profits substantially. In the next ten years, manufacturing could again dominate the regional job market.

As the following table indicates, the total number of jobs did not rebound from the high experienced in 2002. New jobs are generally in the service industry, which does not provide the level of pay or the benefits that manufacturing employees are accustomed to. This may change by 2012 due to automotive sector expansion mentioned previously.

**Table 2.3 Employment by Occupation****Employment by Industry**

Year:	2007	2006	2005	2004	2003	2002
All Industries	2,935	2,763	2,687	2,806	2,661	2,461
Goods Producing	907	987	962	1,116	1,045	922
Natural Resources & Mining	67	64	55	54	58	57
Construction	112	112	101	105	136	119
Manufacturing	728	811	804	956	850	745
Service Providing	2,028	1,775	1,725	1,690	1,616	1,547
Trade, Transportation, & Utilities	761	620	586	588	555	518
Information	6	5	7	6	5	5
Financial Services	163	151	148	139	127	111
Professional & Business Services	106	87	77	74	67	58
Education & Health	495	477	465	453	441	471
Leisure & Hospitality	286	229	244	235	205	200
Other Services	28	32	34	30	38	33
Public Administration	180	171	160	162	174	146

Source: U.S. Dept. of Labor

Hamilton County's per capita income levels have generally exceeded those for the state as a whole. The margin of the difference has decreased over the past decade, but it is still significant.

**Table 2.4 Per Capita Income Comparison**

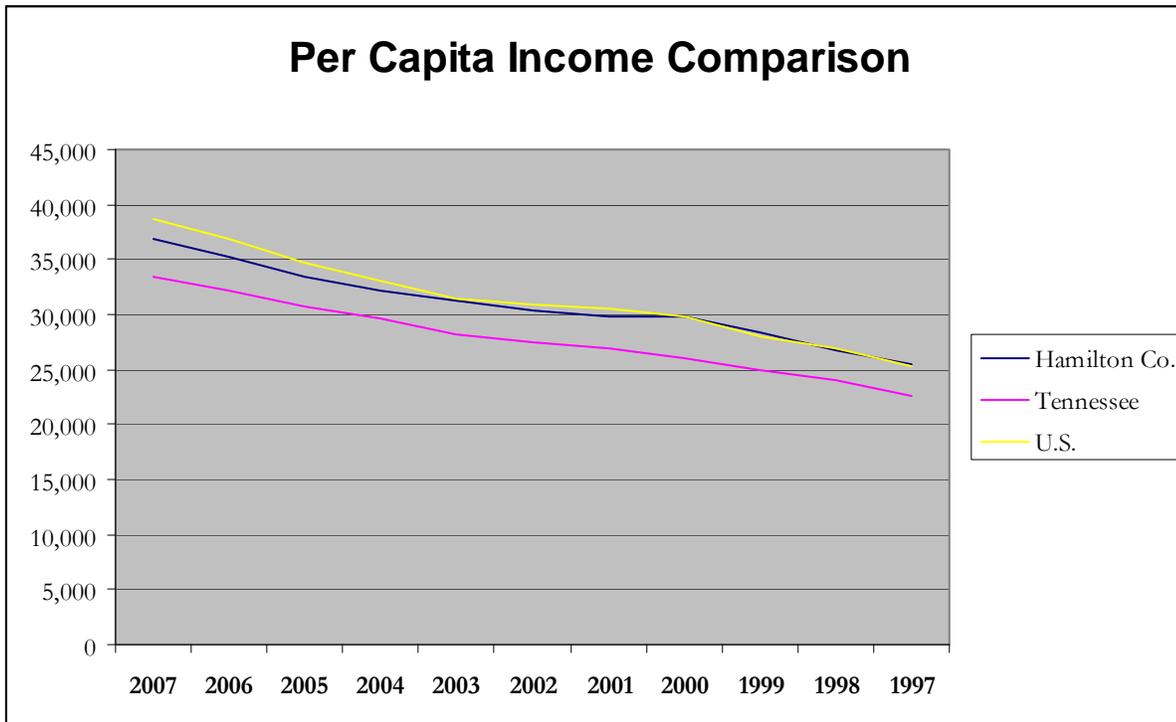
Year	Hamilton	Tennessee	Percent Difference	U.S.	Percent Difference
2007	36,943	33,395	9.6%	38,615	-4.5%
2006	35,300	32,167	8.9%	36,794	-4.2%
2005	33,494	30,705	8.3%	34,690	-3.6%
2004	32,224	29,565	8.3%	33,157	-2.9%
2003	31,195	28,276	9.4%	31,530	-1.1%
2002	30,406	27,448	9.7%	30,838	-1.4%
2001	29,892	26,839	10.2%	30,582	-2.3%
2000	29,815	26,095	12.5%	29,845	-0.1%
1999	28,392	24,898	12.3%	27,939	1.6%
1998	26,766	23,989	10.4%	26,883	-0.4%
1997	25,440	22,676	10.9%	25,334	0.4%

Source: U.S. Dept. of Labor, June 2008.

The comparison between the county and U.S. PCI shows a similar pattern, but in this case, the county PCI is lower than the U.S. composite in most cases. As the following graph indicates, the county PCI has fallen in the past decade, probably as the result of a loss of jobs in the

manufacturing sector where high-paying jobs were replaced by lower-paying service sector employment.

**Figure 2.1**



**Source: U.S. Dept. of Labor, June 2008.**

As the preceding graph clearly indicates, the county's personal income level more closely follows the national trend than that for the state until 2004 when manufacturing jobs began to fall by the wayside. Still, the county's population is a little more affluent than the state as a whole.

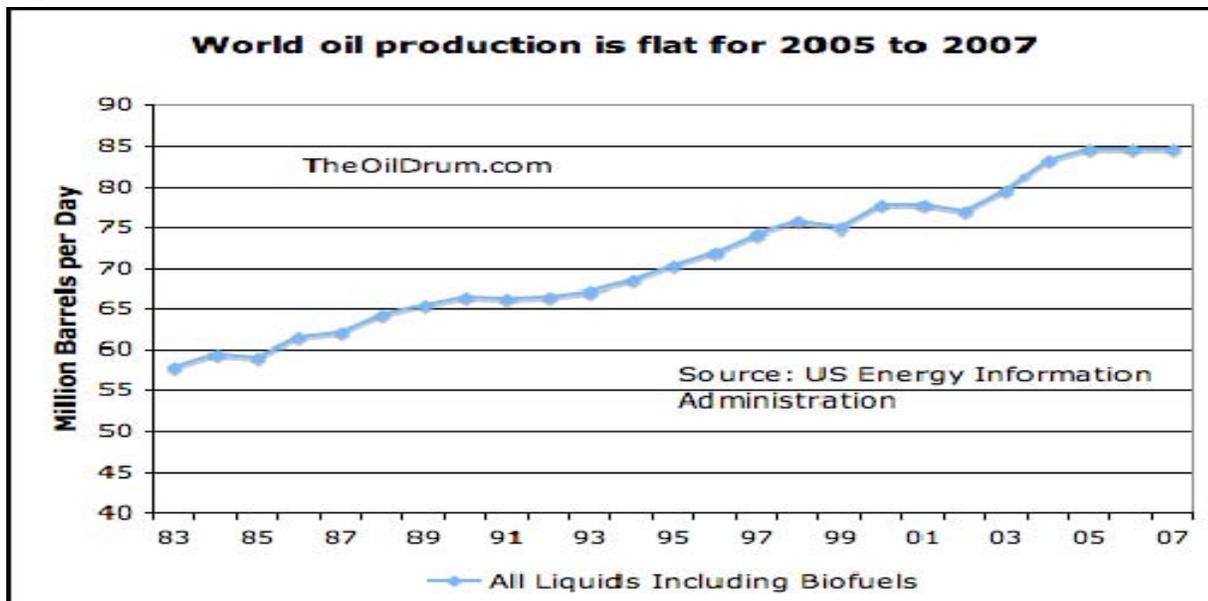
The primary economic problems on the horizon are disruptions in the home mortgage markets and energy supplies. As previously discussed, the home mortgage problems will likely curtail near-term investment in new homes, especially by retirees moving into the region. More problematic (and at a basic level, related) is the increasing cost of energy. It is becoming more apparent that liquid fuels production is not keeping pace with world-wide demand.

Oil depletion is the primary culprit as some of the largest oil fields in the world begin to decline. Statistics published by the International Energy Agency (EU), the Energy Information Agency (US), and the BP Statistical Abstract indicate that crude oil production has not increased above mid-2005 levels. This reflects decline rates in several oil provinces such as the North Sea oil fields (UK and Norway) which are experiencing a 15-18% loss in production annually. Larger declines of more than 30 percent annually are occurring at the giant Cantarell oil field in Mexico. This was the second largest oil field in the world and a primary source of supply for the

U.S., but oil volumes are falling fast and the Mexican oil company PEMEX estimates that exports of oil could cease within five years.

Even OPEC, previously the final arbiter of world oil prices, has lost production capacity in the last few years. Although large volumes of oil will remain available on the world market, there does not seem to be enough to maintain current production levels.<sup>2</sup> This will result in significant dislocations and have pronounced impact on waste generation levels.

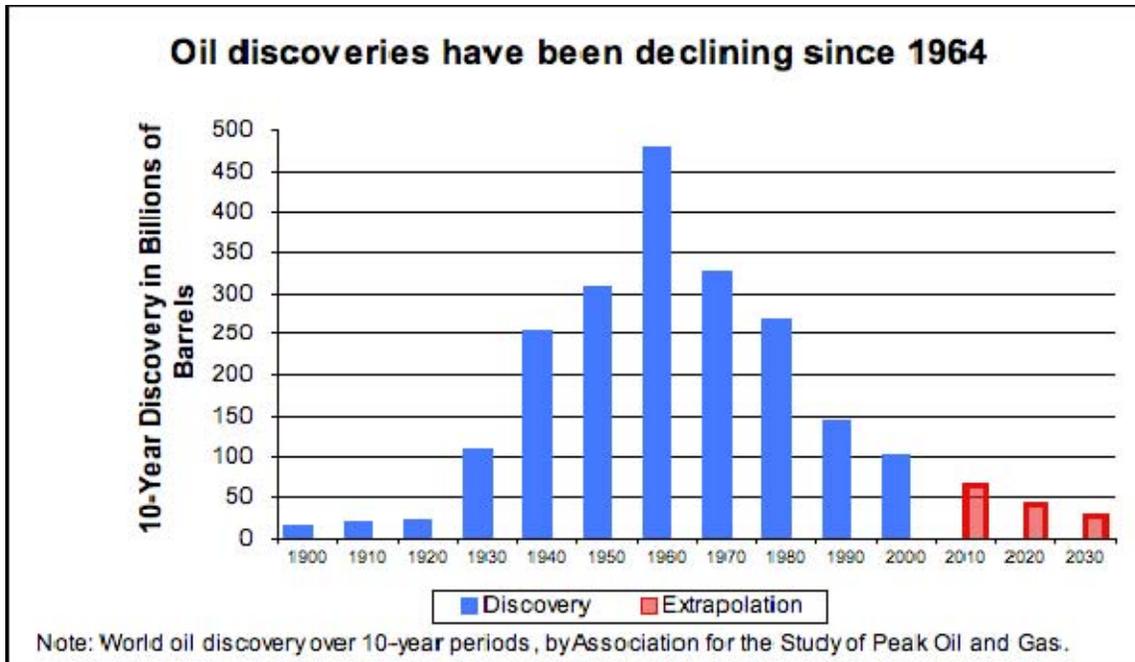
**Figure 2.2**



As the previous graph illustrates, the current production is at a plateau, which may become permanent. No large oil fields have been discovered since the 1970's, and promising geological structures are in areas that present significant difficulties for recovery. For example, Chevron Oil's last major attempt at adding reserves – the “Jack” well – is located 27,000 feet below the surface of the Gulf of Mexico. Bringing oil to production at such depths has never been attempted and will require new technology to deal with extreme pressures and heat. This project will also require investments in the billions of dollars. The basic message that projects like this convey is that the cheap oil has been found; from now on we have to contend with much higher energy costs.

<sup>2</sup> Hirsch, R.L., Bezdek, R.H, Wendling, R.M. *Peaking of World Oil Production: Impacts, Mitigation and Risk Management*. DOE NETL. February 2005.

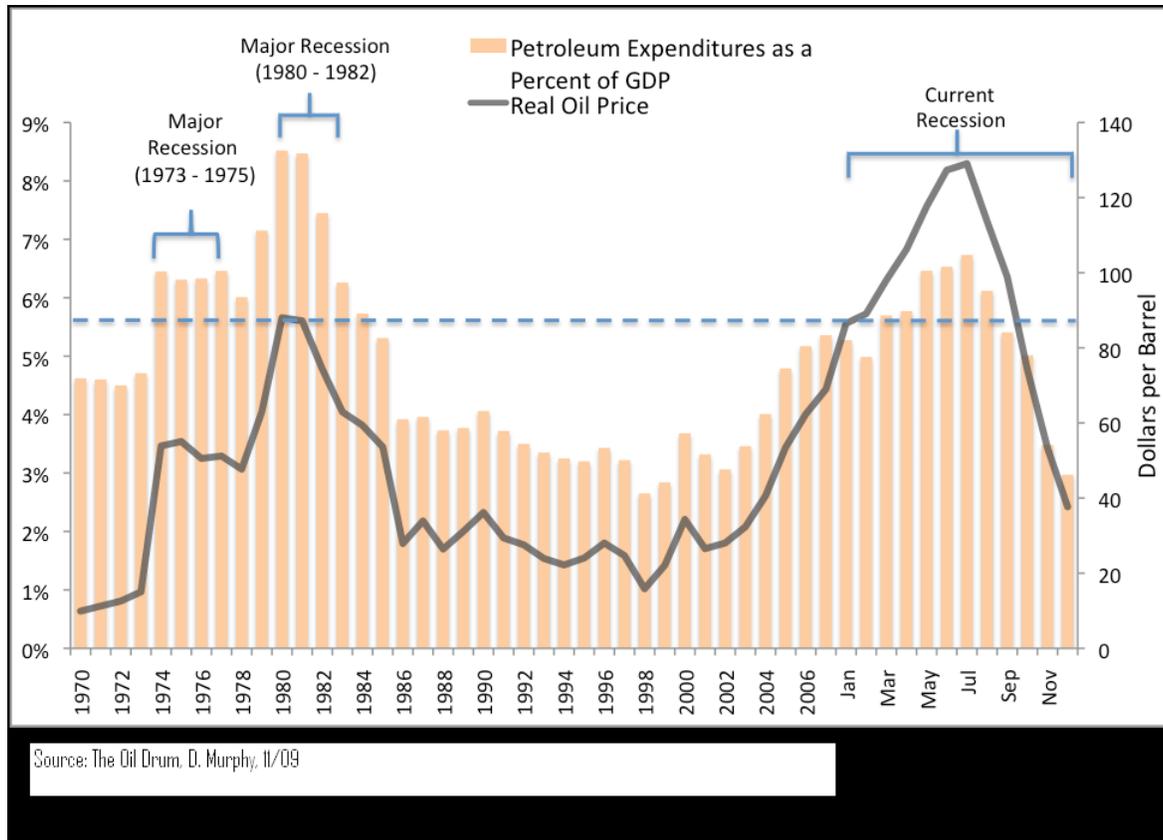
Figure 2.3



A reduction in the world's oil supply does not necessarily translate to higher energy costs in the short term. As the current recession began, oil prices soared to almost \$150 per barrel before plummeting as demand decreased in tandem with economic output. However, prices have been resilient, probably due to the fact that the low-cost oil has been found and produced while new production from deep water sources is expensive; tar sands require extensive processing to recover; and heavy, sour crude requires specialized refining facilities to render it usable.

Taking these factors into account, this assessment uses assumptions that project slow growth over the next five years because energy will likely be a limiting factor. The economy will probably be forced to transition to a lower energy scenario in the United States over the long term and diversify energy sources. As Figure 2.4 clearly illustrates, the economy rises and falls on the availability of energy resources. When those resources become too expensive, the economy lapses into a recessionary phase, and with continuing limitations on our preferred energy source, the economy cannot grow as it did in the past.

**Figure 2.4**



### SECTION 3: 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.*

Several waste characterization studies conducted in various parts of the country may be used to estimate waste stream components in the southeast Tennessee region. There are no known contemporary studies that were performed in Tennessee but studies from other states should provide a reasonable source for extrapolating waste generation attributes to local populations. The following table provides a comparison of some studies in relatively comparable states as well as the nationwide EPA estimate.

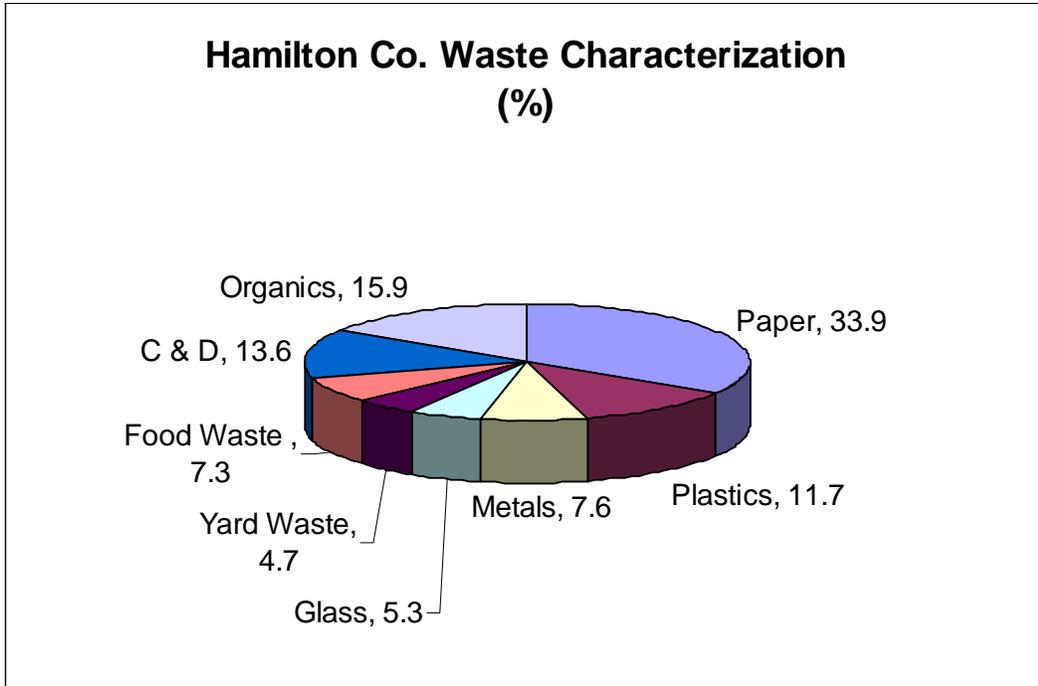
**Table 3.1****Waste Characterization Studies**

Material	Georgia 2004	Iowa 2005	Ohio 2005	EPA 2006
Paper	38.7	33	41	33.9
Plastics	15.8	14.9	16	11.7
Metals	5.3	4.7	4	7.6
Glass	3.7	1.7	5	5.3
Yard Waste		1.6	9	12.9
Food Waste		10.6	15	12.4
Wood		8		5.5
C & D	5.9	5.5		
Durable		5.1		
Textiles & Leathers		4.9	6	7.3
Diapers		2.4	4	
Rubber		0.5		
HHMS		0.4		
Other		6.8		3.3
Organics	27.2			
Inorganic	3.4			
Total:	100	100.1	100	99.9

Other relevant information comes from the region's 2008 Annual Report to TDEC. This document indicates that about 614,950 tons of waste was produced in the region. Of that, 83,567 or 13.6% went to a Construction & Demolition landfill; 97,932 tons or 15.9% was sewage sludge; and 28,905 tons or 4.7% was compost.

As is obvious from the table, different states use different definitions for the material types. From observation of the Hamilton County waste stream, the Georgia percentages are likely to be representative because those numbers are heavily influenced by the Atlanta urban area, which is near the Chattanooga region. However, Georgia's methodology excludes some important material classifications. Existing information taken from the 2008 Annual Report gives good indications of sewage sludge, compost, and C & D waste for Hamilton County, and using that information as a base, Georgia's "Organic" percentages as a reference point, and the Environmental Protection Agency's numbers as a primary guide, composite percentages were calculated as displayed in the following chart. Very little change is expected in waste stream composition over the next five (5) years.

**Figure 3.1**



It is highly probable that all Hamilton County households have access to a curbside waste collection option. There are several private haulers operating in the area, including Allied Waste, which hauls for municipal governments as well as private county households. All of the municipalities have a curbside and yard waste collection program. There are a total of 11 recycling centers in addition to the Chattanooga curbside recycling program, a central waste tire collection center, and a household hazardous waste collection center that is open once per month and is available to all county and city residents.

**Table 3.2**

Jurisdiction/ Sector	Collection	Disposal Options	Current Problem Waste Handling	Future Problem Waste Handling	Other Problem Waste
Hamilton County	Two transfer stations and six recycling centers  Available to all residents	All waste collected at convenience centers is taken to the Birchwood Class I landfill in northern Hamilton County	Waste Tires: Mac Tire, Inc. contract for all jurisdictions in the county. Automotive fluids are accepted at 4 of the recycling centers and all accept florescent light bulbs.		
Chattanooga	Curbside collection	Waste is hauled to the Birchwood Class I landfill	Automotive fluids, used oil, latex paint, fluorescent bulbs and electronics are collected at recycling centers and the City's household hazardous		

			waste collection center.		
Collegedale	Curbside collection	Same as above	Provided by Hamilton Co. & the City of Chattanooga		
East Ridge	Curbside collection	Same as above			
Lookout Mountain	Curbside collection	Same as above			
Red Bank	Curbside collection provided by Waste Connections	Same as above			
Signal Mountain	Curbside collection	Same as above			
Soddy-Daisy	Curbside collection	Same as above			
Walden	Curbside collection provided by Allied Waste	Same as above			

## SECTION 4: REGIONAL COLLECTION SYSTEMS

*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.*

Hamilton County has two transfer stations strategically located to maximize access to all residents (see attached map). The centers are located as follows:

Spring Creek Transfer Station, East Ridge  
 Sequoyah Transfer Station, Soddy-Daisy

Spring Creek Transfer Station is open from 8:00 a.m. to 5:00 p.m., Monday through Friday, and Sequoyah Transfer Station is open Tuesday through Saturday, 8:00 am to 3:30 pm.. All of the centers collect paper and metals for recycling. Tires are collected at the county Highway Department located adjacent to the Standifer Gap Recycling Center.



**Sequoyah Transfer Station**

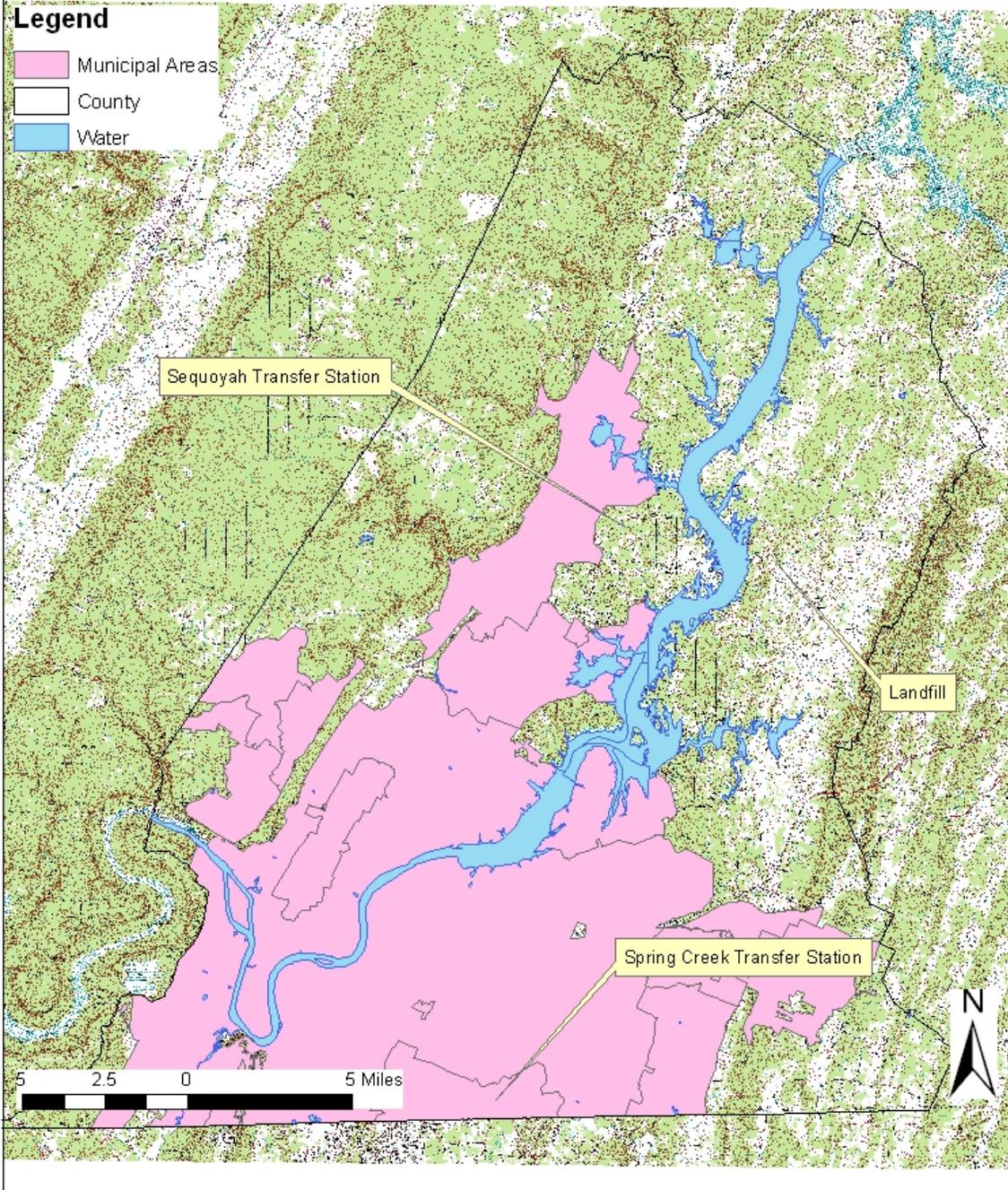


**East Ridge Transfer Station and Recycling Center**

The minimum number of convenience centers required is calculated using the formula that determines a reasonable number by land area. With a current population of about 327,236, the minimum required number of centers would be eight (8) using the TDEC formula of dividing the population by 12,000. This would probably be considered an excessive number of convenience centers when actual service areas are considered. As Figure 1.1 graphically indicates, 56% of the county is comprised of municipalities that provide collection service, and large areas of the remaining land area have steep slopes along the eastern rim of the

Cumberland Plateau or are part of the Tennessee Valley Authority's impoundment system for the Tennessee River and its tributaries. The plateau (known as Walden's Ridge) is also furrowed with deep hollows and drainage basins that make development impossible, and timber companies own large tracts that cannot be developed. As a result, a large proportion of those not served by a municipal waste collection system are concentrated in areas within the Tennessee River valley where easy access is available to a transfer station or the landfill in northern Hamilton County. Most, if not all, of the county's rural residents also have access to waste collection by private haulers for about \$6.00 per week or less.

# Waste Collection Coverage



There are two primary constraints to waste collection and disposal: The Cumberland Plateau and the Tennessee River. Of these, the river is by far the most problematic. Outside of Chattanooga (north of the Chickamauga Dam) the river neatly bisects the county and there is no bridge for more than 25 miles. Waste tends to flow toward Rhea County on the east side of the river because hauling it to the Birchwood landfill, which is only a few short air miles in distance, is much further than the Rhea County facility because the nearest bridge is miles away in the northern part of Chattanooga.

The plateau is another impediment to movement, but it is not an insurmountable barrier. However, the roads are very winding, narrow, and difficult to navigate during inclement weather. Taft Highway (U.S. 127) is the only road that can be used to haul waste off the mountain; all other roads cannot accommodate large truck traffic.

Since the population distribution model did not adequately represent Hamilton County, the spatial model was used. The total square miles of areas without municipal service are divided by 180 to arrive at a reasonable number of collection facilities. As the following table shows, Hamilton County has about 346 square miles of space outside of municipal service areas and 26 square miles of State-owned property. This includes undeveloped land, parks and public lands, areas with building restrictions, etc. The conclusion is that two (2) convenience centers are sufficient, but in reality, the county has three collection points because many in northeastern Hamilton County use the collection system located at the Birchwood Landfill.

**Table 4.1**

**Minimum Collection Required**

	County Sq. Miles	Municipal Sq. Miles	Difference	Required Centers	Existing Centers
<b>Hamilton</b>	539				
Chattanooga		135.21			
Collegedale		8.33			
East Ridge		8.26			
Lookout Mtn.		1.26			
Red Bank		6.44			
Signal Mtn.		6.68			
Soddy-Daisy		23.03			
Walden		4.2			
State Land*		26.2			
Total:		219.61	319.39	1.77	2

\*State-owned property total for tracts over 100 acres.

Eight municipalities within Hamilton County provide waste collection service to their residents. Red Bank, Soddy-Daisy, and Walden contract for waste collection service while the other provides service through their respective public works departments. The following table provides an estimate of waste quantities that were likely generated in each municipality as well as the county.

**Table 4.2**

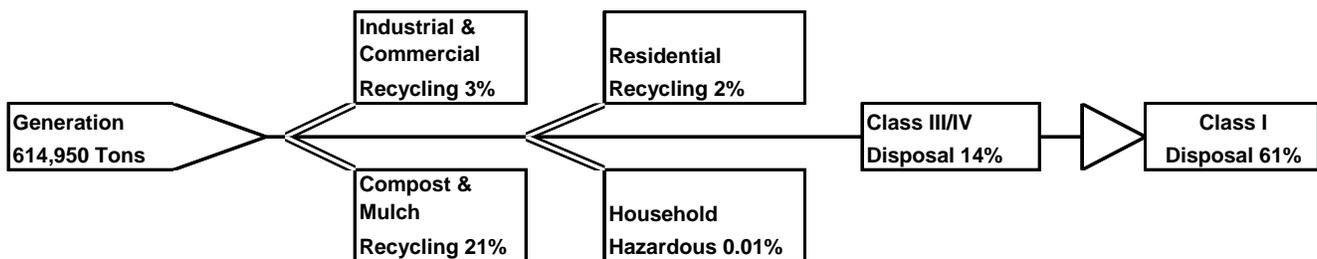
Jurisdiction	Annual Tons
Chattanooga	234,536
Collegedale	10,341
East Ridge	30,116
Lookout Mountain	2,870
Red Bank	18,519
Signal Mountain	12,133
Soddy-Daisy	16,466
Walden	3,104
Non-Municipal	135,182
<b>Total:</b>	<b>463,266</b>

Chattanooga operates automated waste collection vehicles, and East Ridge is in the process of automating its garbage truck fleet, which will reduce its manpower requirements. Soddy-Daisy contracts with Waste Connections and Walden’s residents are served by Allied Waste, which operates under a contract with the Town. The remainder of the county’s municipalities have traditional waste collection service.

**Regional solid Waste Flow and Life-Cycle**

The following chart represents data collected for the 2008 Annual Report for the Southeast Tennessee region. All waste produced within Hamilton County was accounted for in a rigorous data collection exercise that included the TDEC *Origin Report*, landfill disposal reports, and information collected from waste haulers to determine out-of-state quantities.

**Figure 4.1 Waste Generation**



There are twelve (12) recycling drop-off centers located throughout the county, and the City of Chattanooga provides an innovative curbside program to all residents willing to participate. In

addition, Orange Grove Center, the city’s Materials Recovery Facility, collects materials directly from the public. Even with all of that effort, only 2% of the county’s waste is recycled. A partial reason for this is that most of the municipalities do not actively support recycling, and in the non-municipal areas, a majority of the households contract with a private waste hauler and those agreements do not include a recycling option.

County recycling centers are located next to transfer stations, and those who use that disposal option have an incentive to recycle because they must pay for the disposal of each bag of waste. The Sequoyah Transfer Station collects about 3,700 tons annually and the East Ridge Transfer Station collects about 6,300 tons for a total of 10,000 tons. A large proportion of this material comes from municipal areas that already have curbside collection, so the transfer station totals do not necessarily correspond to the quantities of waste produced in rural areas. Most of those areas are also served by private curbside collection companies, but quantities collected by these companies are not available.

The City of Chattanooga’s North Hawthorne Street facility annually processes more than 25,000 tons of wood and yard waste along with leaves. This does not include wood waste and leaves processed by other municipal programs located in Collegedale, East Ridge, and Signal Mountain, which collectively process around 1,500 tons. In addition to this compost, Chattanooga’s Moccasin Bend Wastewater Treatment Plant processed 97,000 tons of biosolids last year for land application. This material comes from Chattanooga, the surrounding municipalities, and stretches out into the county through the efforts of the Hamilton County Water & Wastewater Treatment Authority.

**SECTION 5: 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.*

**Table 5.1**

<b>County</b>	<b>Compared to Base Year</b>	<b>Qualitative-Real Time</b>
<b>Hamilton County</b>	28%	39%
<b>25% Waste Reduction Goal Achieved</b>	Yes	Yes

The base year per capita waste generation rate was 1.59 tons as indicated in a May 26, 1994 letter from Paul Evan Davis (TDEC) to Jack Marcellis, past chairman of the Southeast Tennessee Municipal Solid Waste Region. Assuming a 2008 population of 327,236, Hamilton County's waste generation rate was 1.14 tons per person annually (373,354 tons/327,236). That amounts to a 28% reduction in per capita waste from the base year figure.

During the period when the base year per capita generation rate was determined, the City of Chattanooga was contributing at least 60,000 tons of biosolids (dried or partially dried sewage sludge) to Class I landfills. New technology has allowed the city to divert this material to land application. This material never met the general definition of solid waste, but the Solid Waste Management Act did not distinguish among types of material disposed of in Class I facilities, so the biosolids counted as a component of the Hamilton County solid waste stream when the base year number was determined. Removing that quantity amounted to a reduction of 15-18% without any other waste reduction, diversion, or recycling program. Even with the biosolids, however, the city was able to consistently reduce its waste stream by 25% using the "real time" reduction method.



Access Road Recycling Center – City of Chattanooga/Orange Grove Center Operation

In addition to biosolids diversion, the City of Chattanooga also operates a high-volume wood waste recycling and composting facility at its North Hawthorne Street facility. A large, high-capacity tub grinder reduces much of the city's wood waste to mulch, which is given to city residents for landscaping purposes or sold to non-residents.

Collegedale, East Ridge, and Signal Mountain have joined with other cities in the region to fund the operation of a portable wood chipper. This allows some of the largest cities in the county to reduce their respective waste streams by a considerable margin.



Warner Park Recycling Center – City of Chattanooga/Orange Grove Center Operation

## SECTION 6: COLLECTION AND DISPOSAL CAPACITY

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.

**Table 6.1: Regional Landfills**

Site Name(s)	Annual Tons Hamilton County	Permit Number	Current Capacity	Maximum Capacity	Projected Life of Facility
Birchwood Landfill	200,000	SNL33-0273	Capacity not determined	Capacity not determined	10 years
Environmental Materials, LLC	85,000	DML33-0086	Capacity not determined	Capacity not determined	15 years

*Note: Capacity limits have not been explored. Landfills are capable of handling all local waste plus large volumes of waste hauled from other counties.*

All waste collected at Hamilton County transfer stations is hauled to Chattanooga’s Class I landfill in Birchwood. The Class III/IV landfill is immediately adjacent to the Class I facility, but it is owned and operated by Environmental Materials, LLC; it is not publicly owned. That organization also operates a transfer station in Chattanooga.



**Entrance to the Birchwood Class I Landfill and the Environmental Materials Class III Landfill**

*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.*

**Table 6.2: Regional Collection Systems**

Provider of Service	Service Area	Population Total Under This Service	Frequency of Service (Weekly, Bi-weekly, on call, etc.)	Annual Tonnage Capacity	Type Service (Curbside, Convenience Center, Green Box)
Hamilton County	County-wide drop-off	95,000	As Needed	60,000	Transfer Station/Landfill drop-off
Allied Waste	County-wide collection (private)	Not Available	Weekly	150,000	Curbside

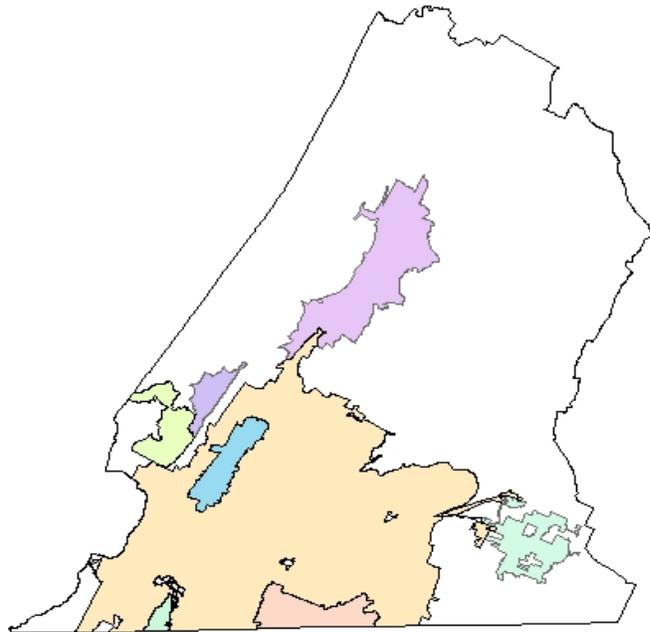
**Table 6-3: Permitted Recycling Centers**

<b>ID Number</b>	<b>Name</b>	<b>Owner</b>
CCC33-0348	Standifer Gap Recycling Center	Hamilton Co.
CCC33-0349	Middle Valley Recycling Center	Hamilton Co.
CCC33-0431	Sequoyah Recycling Center	Hamilton Co.
CCC33-0447	East Ridge Recycling Center	Hamilton Co.
CCC33-0481	Red Bank Recycling Center	Hamilton Co.
CCC33-0488	Highway 58 Recycling Center	Hamilton Co.

**Table 6-4: Permitted Waste Collection & Processing Centers**

<b>ID Number</b>	<b>Name</b>	<b>Owner</b>
SWP33-0125	Signal Mountain Transfer Station	Signal Mountain
SWP33-0147	Sequoyah Transfer Station	Hamilton Co.
SWP33-0201	Spring Creek Transfer Station	Hamilton Co.
SWP33-1120	Chattanooga Pit Burner	Chattanooga
SWP33-1186	Chattanooga Composting	Chattanooga
SWP33-1369	Chattanooga Transfer	Chattanooga Transfer LLC

## Municipal Waste Collection Systems



### Legend

- County
- Chattanooga
- Collegedale
- East Ridge
- Lookout Mountain
- Red Bank
- Soddy-Daisy
- Signal Mountain
- Walden

0 4.5 9 18 Miles



## SECTION 7: 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.

Much of Hamilton County's waste collection budget is derived from fees collected at the transfer stations for waste disposal. Only about 12% of the fees appear to be derived from local tax sources.

**Table 7.1 Expenditures**

EXPENDITURES			
Description	Current Need	Unmet Needs	Total
Salary and Benefits			
Transportation/Hauling			
Collection & Disposal Systems	295,032.12	-	295,032.12
Equipment			
Convenience Centers			
Transfer Station	510,284.15	-	510,284.15
Recycling Center	167,029.04	-	167,029.04
Landfill Post-Closure			
Administration			
Education			
Capital Projects			
Total:	972,345.31		972,345.31
REVENUE			
Property Taxes	113,699.06	-	113,699.06
Sales Taxes			
Surcharges			
Disposal Fees			
Collection Charges			
Industrial or Commercial Charges			
Convenience Center Charges			
Transfer Station Charges	345,994.45	-	345,994.45
Sale of Recycled Materials	214,873.80	-	214,873.80
Recycling Grants	297,778.00	-	297,778.00
Other			
Total:	972,345.31	-	972,345.31

The county does not operate the primary waste collection and disposal system; the City of Chattanooga owns the only Class I facility in the county, and its waste collection and disposal budget is almost seven (7) times greater than the county's.

**Table 7.2**

**City of Chattanooga**

	<b>Revenues</b>
Landfill Tipping Fees	\$ 487,572
Landfill Permit Fees	3,500
City Tipping Fees	6,275,560
Recyclable Material	60,000
S/W Surcharg - State	85,000
Interest	352,750
<b>Total:</b>	<b>\$ 7,264,382</b>

	<b>Expenditures</b>
Recycle	\$ 818,524
Capital Improvements	-
Landfill (Summitt)	352,750
Waste Disposal-City Landfill	1,162,888
Compost Waste Recycle	611,029
Household Hazardous Waste	100,000
Solid Waste Reserve	435,000
Capital Improvements	-
Dept Service	3,784,191
<b>Total:</b>	<b>\$ 7,264,382</b>

**Waste Reduction/Diversion\***

Recycle	\$ 818,524
Compost	611,029
Household Hazardous Waste	100,000
	<b>\$ 1,529,553</b>

*\*Does not include Class III/IV waste*

Percent of Budget:	21.1%
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The last line in the preceding table, "Percent of Budget," indicates that at least 21 percent of the City's budget is allocated to waste reduction, recycling, and/or diversion activities. Chattanooga accounts for more than half of the county's population, amounting to a significant contribution to the waste reduction

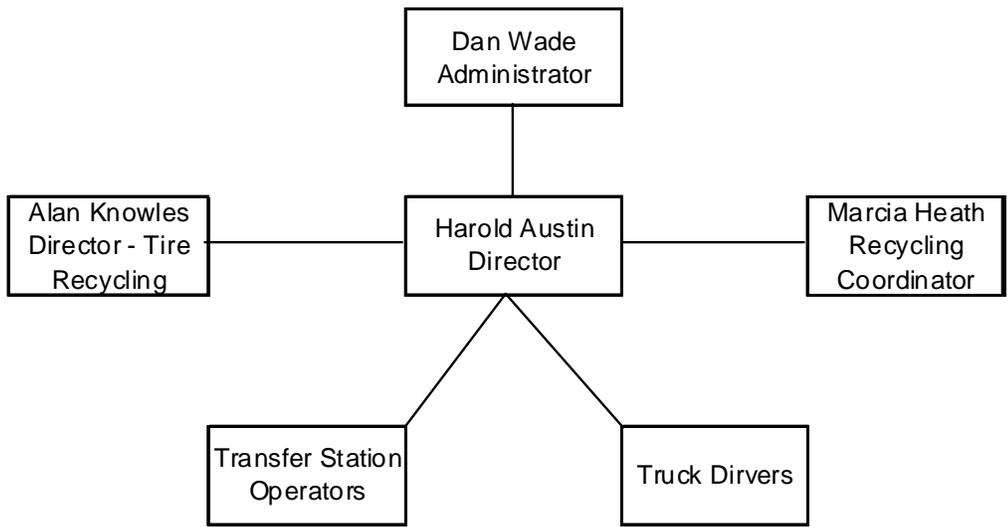
**SECTION 8: ORGANIZATION, STAFFING AND FACILITIES**

*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.*

**Solid Waste Staffing**

The organization of Hamilton County's waste collection and disposal system is as follows:

Dan Wade: Administrator - 1  
 Marcia Heath: Recycling Coordinator - 1  
 Alan Knowles: Tire Recycling - 1  
 Tire Recycling Center Workers - 2  
 Transfer Station Attendant - 4  
 Recycling Center Attendant - 6  
 Truck Drivers - 2



**Municipal Programs**

Municipality	Employees	Services
Collegedale	3	Garbage, Brush Collection; Wood Waste Facility
Chattanooga	34	Garbage, Brush, Curbside Recycling, Drop-off Recycling, Yard Waste/Wood
East Ridge	4	Garbage, Brush Collection, Yard Waste Facility
Lookout Mountain	1	Waste Collection Contract
Red Bank	4	Garbage, Brush, Leaf Collection
Signal Mountain	5	Garbage, Brush, Leaf Collection; Drop- Off Recycling; Transfer Station
Soddy-Daisy	2	Waste Collection Contract; Bulk Item Collection
<b>Total</b>	<b>52</b>	

## SECTION 9: REVENUE

*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.*

A large proportion of the waste collection and disposal budget is derived from fees, but some of those fees are actually paid from tax-derived funds. Tax revenues are not expected to increase substantially over the next five years. Current year sales state-wide have decreased enough to have a substantial negative impact on the state budget. This situation shows no signs of reversing in the five year planning period.

The county's last audit indicates that the solid waste budget was around \$972,000, but only about 12 percent of those funds were taken from local taxes. Hamilton County has a large, diverse waste collection system that is shared among seven (7) municipalities and the county.

Most municipal governments do not have a separate fund for solid waste and therefore we cannot provide a reasonable estimate of real revenues. The source of revenues, however, generally come from property and sales taxes.

## SECTION 10: EDUCATION

*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?*

The City of Chattanooga and Hamilton County have been very proactive in maintaining and expanding recycling and waste reduction programs.

Hamilton County's Recycling Department has a full-time director who is heavily involved in public outreach to all members of the community, including schools. The county also has a web-based educational component at <http://www.hamiltontn.gov/Recycle/>. The following table illustrates the level of information available online at the county website.

**An Introduction to Recycling  
What is Recycling and Why Should I Do  
It?**

Recycling means separating, collecting, processing, marketing and ultimately using a material that would have been thrown away.

**E-Mail Recycling**  
**WHERE to Recycle**  
**WHAT to Recycle**  
**HOW to Recycle**  
**Electronics**

This morning's newspaper can be recycled for another morning's news or other paper products.

- **Recycling** reduces our dependence on landfills and incinerators.
- **Recycling** protects our health and environment.
- **Recycling** conserves our natural resources

### What You Can Recycle

#### **Paper**

-- Newspaper, office paper, cardboard and other paper types

#### **Yard Trimmings**

-- Grass, leaves, shrub and tree clippings are recycled by composting

#### **Glass**

-- Bottles and jars (clear, green and brown) but PLEASE remove the lids

#### **Aluminum & Steel Cans**

-- Beverage and food containers

#### **Other Metals**

-- Auto bodies, refrigerators, stoves and batteries

#### **Used Motor Oil**

-- Car crank case oil

#### **Plastics**

-- Soda bottles, milk jugs, etc. (just about any plastic with a neck)

#### **Small Rechargeable Batteries/Electronics**

-- Computers, Monitors, Radios, Small household appliances and more. For more information, call the Recycling office at 423-209-6480

### What You Can Do

**Reduce** the amount of garbage you generate by purchasing and using products wisely.

**Reuse** products whenever possible.

**Recycle** all materials possible.

### Recycling

### Used Motor Oil

### Recycling

### Hazardous Materials Storing & Recycling

### Hazardous Materials Substitutes

### Composting Tips

### Gas Saving Tips

### Recycling At Home

### More Recycling Tips

## ***Scenic Cities Beautiful Commission***

The Scenic Cities Beautiful Commission (SCBC) a joint agency with the City of Chattanooga and Hamilton County maintains two goals: to identify main sources of litter and to change attitudes regarding waste disposal. Initiated in 1962, the SCBC was tasked with developing a structured program addressing proper waste disposal. The only previous coordinated effort to address this problem was an annual, one-day clean-up event. This approach was inadequate in many ways including a failure to gain public support, and showed no connection between a clean city and economic development. It also had little support from public officials.

The SCBC coordinates with several other groups including the Codes and Committee Services, Public Works Department, and educational institutions. Initiatives include continuous education through publications and maintaining currency in the latest waste disposal technology.

Benefits to the community include health and safety, a boost to tourism, economic investment in the community, and civic pride. The cost benefit is \$5.00 returned for every \$1.00 of local support.

## **SECTION 11: PLANNING**

*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.*

Recommendations regarding programs and facilities are complicated by the fact that there are draft rule changes that would heavily impact municipal governments with 3,000+ residents. Chattanooga, Collegedale, East Ridge, Red Bank, Soddy-Daisy, and Signal Mountain could be required to develop a solid waste plan and implement programs that may not exist in some of those municipalities. Collegedale is in the process of developing a recycling program, but East Ridge, Red Bank, and Soddy-Daisy would be required to do a great deal more than the current capacity would permit, and the county's recycling centers located in each of these three cities may not be adequate.

There are sufficient waste disposal facilities, and they are well maintained. Waste disposal capacity is available in the county from two permitted disposal facilities, a Class I and a Class III/IV. There are many recycling opportunities available through municipal and county programs, and there are a sufficient number of yard waste/wood waste facilities to handle most of that material in the metropolitan region.

It is worthwhile to note that a great deal of Hamilton County's waste is disposed of in neighboring counties and out-of-state landfills. Last year, only a little more than 43 percent of the waste that went to landfills ended up in a Hamilton County disposal facility.

One problem likely to occur in the future is associated with the maintenance of existing facilities and equipment with lower revenues. The loss of sales and property taxes is highly likely, and there are no mechanisms available to Tennessee counties that would ameliorate these conditions.

In general, Hamilton County and its constituent municipalities do not have control over a significant part of the waste stream. Of the 373,354 tons of Class I waste, only about 80,000 tons or 21 percent of the waste went to the Birchwood Landfill operated by the City of Chattanooga. This means that the rest of the waste, almost 80 percent, was collected and hauled out of the county by private haulers. Only about 2.7 percent of that waste was collected at county facilities.

## **Recommendations**

### **Education**

**Recommendation:** Make more use of the local KAB affiliate, *Scenic Cities Beautiful*, and provide more support to other non-profit organizations.

**Action Item:** Include a Scenic Cities Beautiful web page on the county or cities website and add links to that page at all local government web addresses.

### **Facilities and Programs**

**Recommendation 1:** Cooperative effort with the Town of Signal Mountain to allow county residents to use the Signal Mountain Transfer Station for disposal on a fee basis (as the other county transfer stations operate).

**Action Item:** Develop an agreement between the county and town to implement the program.

**Funding Source:** Local Funds

**Recommendation 2:** The Town of Walden should develop a cooperative relationship with the Town of Signal Mountain to continue allowing Walden residents to use the Signal Mountain recycling center.

**Action Item:** Develop an agreement between the two towns.

**Funding Source:** Local Funds

**Recommendation 3:** Full-service waste collection and recycling center at the Birchwood Landfill.

**Action Item:** Use existing fenced area for roll-off containers, attendant shelter, etc.

**Funding Source:** Local funds and county recycling rebate from the Solid Waste Management Fund.

**Recommendation 4:** Re-start the Collegedale drop-off recycling program.

**Action Item:** Development District staff should offer technical assistance and support in the City's efforts to reinstate the program.

**Funding Source:** Local funds and shared county recycling rebates from the Solid Waste Management fund

**Conclusion**

In general, Hamilton County has all of the facilities and programs in place to meet statutory requirements. Some improvements are possible, but the county has made a good faith effort to provide its residents with disposal, recycling, and waste diversion options using the most cost-effective methods available.

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## **ATTACHMENT I**

### **ALL LOCATIONS:**

#### **Acceptable Materials**

- \*Plastics # 1 & # 2 (Soda bottles, milk jugs, shampoo & conditioner bottles, etc.)
  - \*Brown, Green & Clear Glass
  - \*Aluminum & Steel Cans
  - \*Mixed Paper Newspaper
  - \*Corrugated Cardboard
- \*Small re-chargeable batteries (batteries only)
  - \*Newspaper
- \*Computers, Monitors, small household appliances, office/cell/fax phones, DVD/VCR players, stereos and radios

*\*Used Motor Oil is ONLY accepted at the following 5 locations: Standifer Gap, Hwy 58, Middle Valley, Sequoyah & Orange Grove Recycling Centers*

#### **East Ridge Recycling Center**

1001 Yale Street (behind East Ridge Hospital)  
East Ridge, TN  
(423) 899-2768  
*Days & Hours of Operation*  
*Tuesday & Thursday*  
*9:00 AM - 5:00 PM*  
*Saturday 8:00 AM - 4:00 PM*

#### **Hwy 58 Recycling Center**

5414 Hwy. 58 (corner of Hwy. 58 & Hickory Valley Rd)  
Chattanooga, TN 37416  
(423) 326-0992  
*Days & Hours of Operation*  
*Monday & Wednesday*  
*9:00 AM - 5:00 PM*  
*Saturday 8:00 AM - 4:00 PM*

#### **Middle Valley Recycling Center**

1600 Crabtree Road  
Hixson, TN 37343  
(423) 843-9317  
*Days & Hours of Operation*  
*Monday & Wednesday*  
*9:00 AM - 5:00 PM*  
*Saturday 8:00 AM - 4:00 PM*

#### **Red Bank Recycling Center**

4851-B Dayton Blvd. (Next to Fire hall #2)  
Red Bank, TN  
(423) 876-2010  
*Days & Hours of Operation*  
*Tuesday & Thursday*  
*9:00 AM - 5:00 PM*  
*Saturday 8:00 AM - 4:00 PM*

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### **Standifer Gap Recycling Center**

7625 Standifer Gap Road  
Chattanooga, TN 37421  
(423) 855-6125  
*Days & Hours of Operation*  
*Tuesday thru Friday*  
*9:00 AM - 5:00 PM*  
*Saturday 8:00 AM - 4:00 PM*

### **Sequoyah Recycling Center**

9525 Lovell Road  
Soddy Daisy, TN 37379  
(423) 842-2391  
*Days & Hours of Operation*  
*Tuesday, Thursday, & Saturday*  
*8:00 AM - 4:00 PM*

### **City of Chattanooga**

**Household Hazardous Waste Collection Day** is held on the 2nd Saturday of each month from 8:00 a.m. to 12:00 noon. 3925 N. Hawthorne.

**Accepted materials include: old paint, insecticides, pool chemicals, etc**

## **CITY OF CHATTANOOGA**

### **What to Recycle at Convenience Centers**

- Everything that is recyclable through curbside
- Shredded paper
- Glass bottles (brown, green and clear)
- Computers and small electronics (no TVs or microwaves)
- Wet and dry cell batteries
- Used Motor oil
- Tubular and compact fluorescent light bulbs (not broken)
  - For more than two tubular bulbs, please bring them in boxes. CFLs may be brought in a shoebox or other small box.

### **Convenience Center Locations**

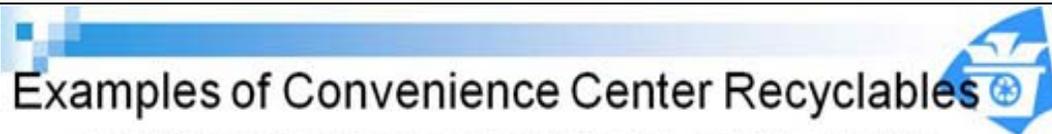
- **Warner Park Recycle Center**, 1250 East Third Street. Chattanooga, TN 37402
- **John A. Patten Recreation Center**, 3202 Kelly's Ferry Road. Chattanooga, TN 37419
- **Access Road at DuPont Parkway** collocated with the Refuse Collection Center. Chattanooga, TN 37415
- **East Brainerd Baseball Complex**, end of Batter's Place Road. Chattanooga, TN 37421

- Brainerd Area, 5955 Brainerd Road. Chattanooga, TN 37411

## Convenience Center Hours

- Monday-Friday: 10 a.m. to 6 p.m.
- Saturday: 9 a.m. to 6 p.m.
- Sunday: 1 p.m. to 5 p.m.

## Examples of Convenience Center Recyclables



### Examples of Convenience Center Recyclables

In addition to all items you may recycle through curbside collection...



# Examples of Curbside Recyclables

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cardboard boxes



cereal boxes



newspapers



notebook papers



magazines



milk jugs



plastic soda/water bottles



detergent bottles



look for #1 and #2



aluminum cans



steel cans

## RECYCLE CENTER

*Town of Signal Mountain*

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1151 Ridgeway Avenue, Signal Mountain, Tennessee 37377

(423)886-4341

### Location

The Recycle Center is located on Ridgeway Avenue just north of the Town Hall complex on the west side of the highway.

### Hours

40 hours per week:

Beginning March 3, 2009

Tuesday	9:00 a.m. - 6:00 p.m.
Wednesday	9:00 a.m. - 6:00 p.m.
Thursday	11:00 a.m. - 6:00 p.m.
Friday	11:00 a.m. - 6:00 p.m.
Saturday	8:00 a.m. - 6:00 p.m.

### **Non-Resident Fee Policy**

Provided at no cost as a benefit to the community.

### **Acceptable Items**

The Center accepts aluminum cans, newspaper, mixed paper, cardboard, #1 and #2 plastics (bottles, jars and jugs only), glass containers (clear, green, brown and blue), and rinsed steel (tin) cans. Citizens are strongly urged to bring recyclable items to the Center because every pound of material not taken to the landfill saves expense to the budget which is funded by property taxes.

### **Household Hazard Materials**

The Recycle Center also accepts the following materials:

- Antifreeze\*
- Brake fluid
- Pool chemicals
- Paint
- Spray paint
- Wood preservatives
- Paint thinner
- Solvents
- Adhesives
- Fertilizers
- Herbicides
- Insecticides
- Pesticides
- Drain openers & polishers
- Household cleaners, including oven cleaners
- Oil\*

The items must be in their original containers or a closed metal container. Items from commercial operators will not be accepted. This is for households only. All items must be given to an attendant to be recorded on a manifest sheet. These items will be accepted on the days the Recycle Center is open.

Items marked \* will be accepted at Signal Mountain Public Works.

### **Mulch**

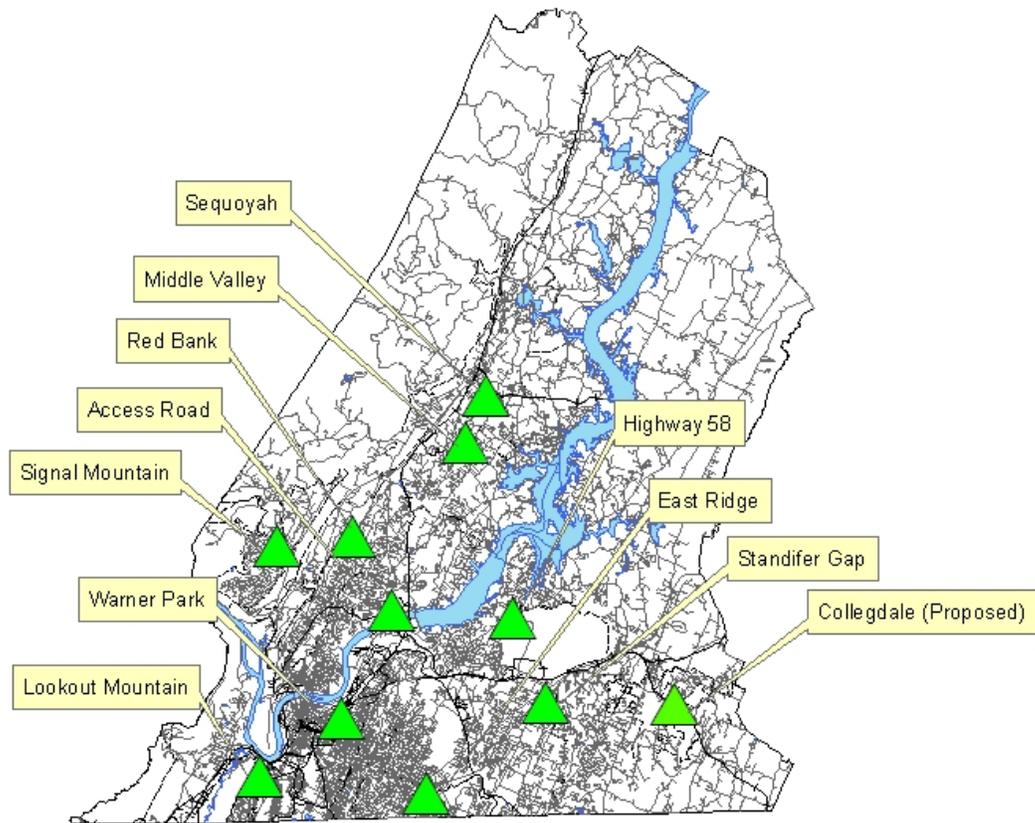
Mulch is available free of charge to our citizens.

### **"Swap Board"**

A "swap board" to facilitate homeowners to make available leftover paints, lawn chemicals, etc., to other homeowners rather than dumping them into the "trash" and, therefore, the landfill.

**ATTACHMENT II**  
**RECYCLING CENTER MAP**

# Hamilton County Recycling Centers



0 3.75 7.5 15 Miles



**ATTACHMENT III**

*ADDITIONAL*

*RECYCLING*

*CENTER*

*PHOTOS*





Lookout Mountain Paper Recycling Site



Signal Mountain Recycling Center Entrance



Free Mulch Adjacent to the Signal Mountain Recycling Center



Birchwood Pike, Hamilton County Recycling Center



Red Bank Recycling Center (Owned/Operated by Hamilton County)



Standifer Gap Recycling Center

**Attachment IV**  
**SOLID WASTE FACILITIES**

# Hamilton County Facilities (Excluding Recycling Collection)

