

**Hamblen
Solid Waste
Needs Assessment
2009**

Section 1: Demographic Information

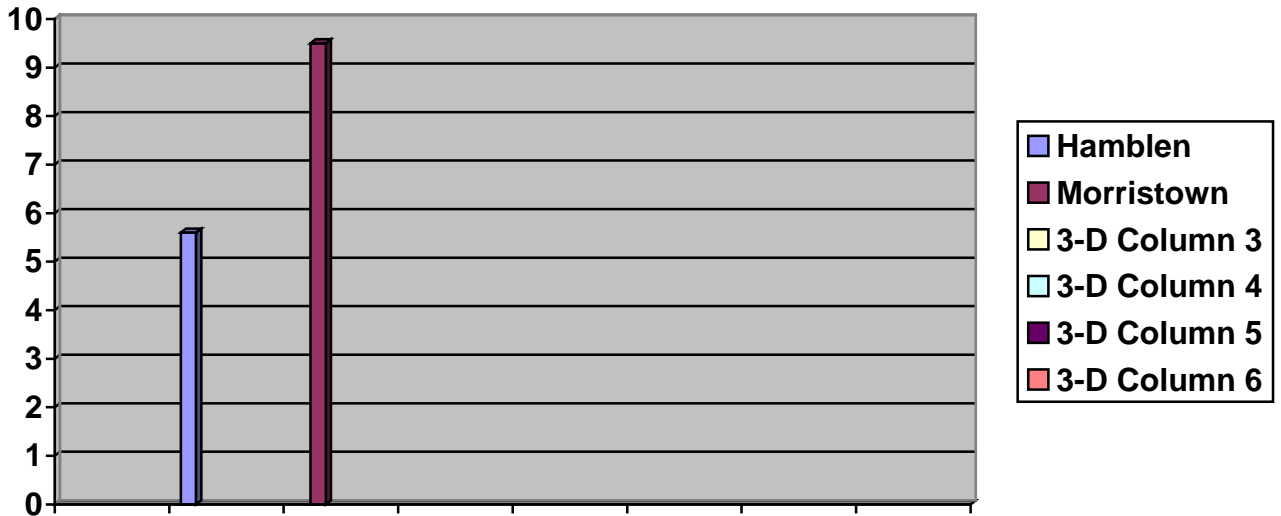
The following table and charts illustrate the population trends of the region, which include Hamblen County and the City of Morristown. The 2010 and 2015 projects are based on existing trends for each jurisdiction as well as knowledge of the area.

The county as a whole is expected to continue to increase in population between 2000 and 2015. Hamblen County is one of the more populated counties in the region and does not have a lot of farms left for major residential development. The 2000 census showed that the County was almost triple the growth of the State between 1990 and 2000, but levels off with the State average in upcoming ten year periods. The large increase is in correlation to the growth of the East Tennessee Region between the 1990 and 2000 census. This growth was largely due to the development of better transportation corridors in the East Tennessee area that allowed for the placement of more manufacture jobs. The City of Morristown has basically mirrored the growth of the county. Future percentage changes are due to the City of Morristown increasing its boundaries. The region of Hamblen County is not going to see large increases in population in the future unless economic amenities are apparent, such as a new industrial plant that will affect population spurts. The rate of growth will vary depending on a host of local, regional, and national trends, as well as the employment of management tools that can affect this rate. These trends will impact countywide land use, housing, transportation and solid waste decisions.

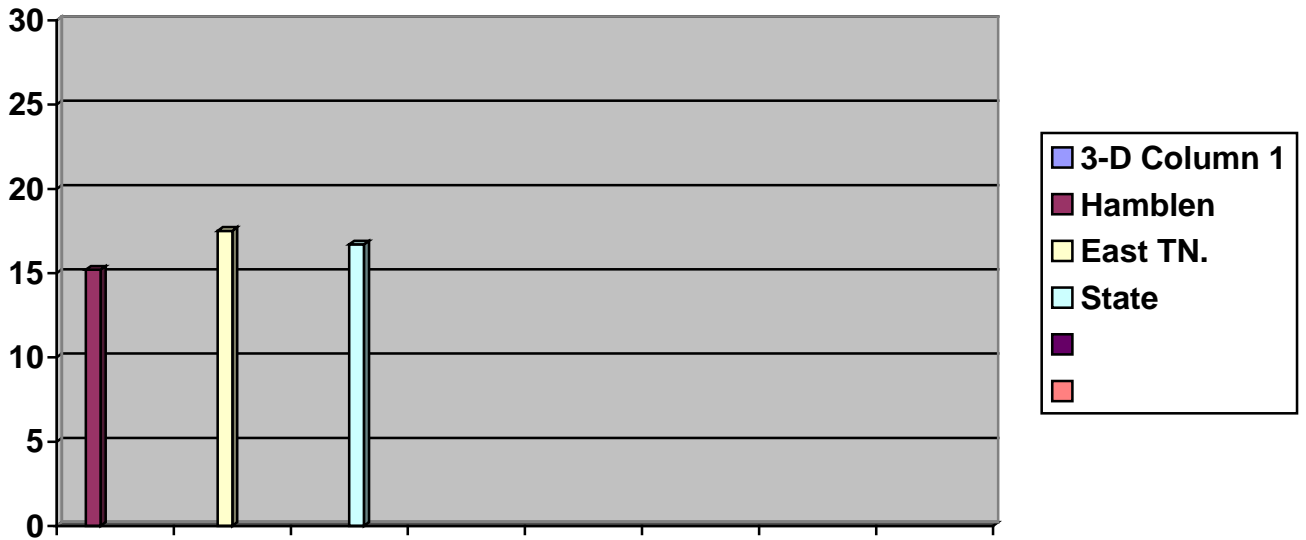
Jurisdiction	1990	2000/% change	2010 / %	2015 / %
Hamblen County	50,840	58,128/15.2%	61,368/5.6%	62,980/2.7%
Morristown	21,385	24,965/16.7%	27,340/9.5%	28,092 / 2.7%

Hamblen County and Morristown

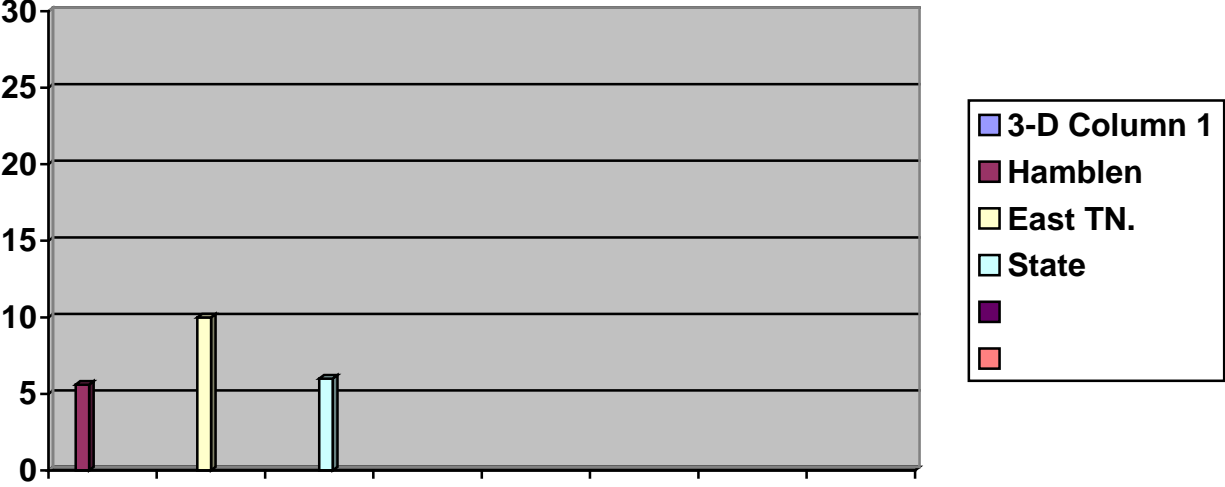
Population Growth Percentage: 2000 - 2010



Population Growth: 1990-2000



Population Growth: 2000 - 2010



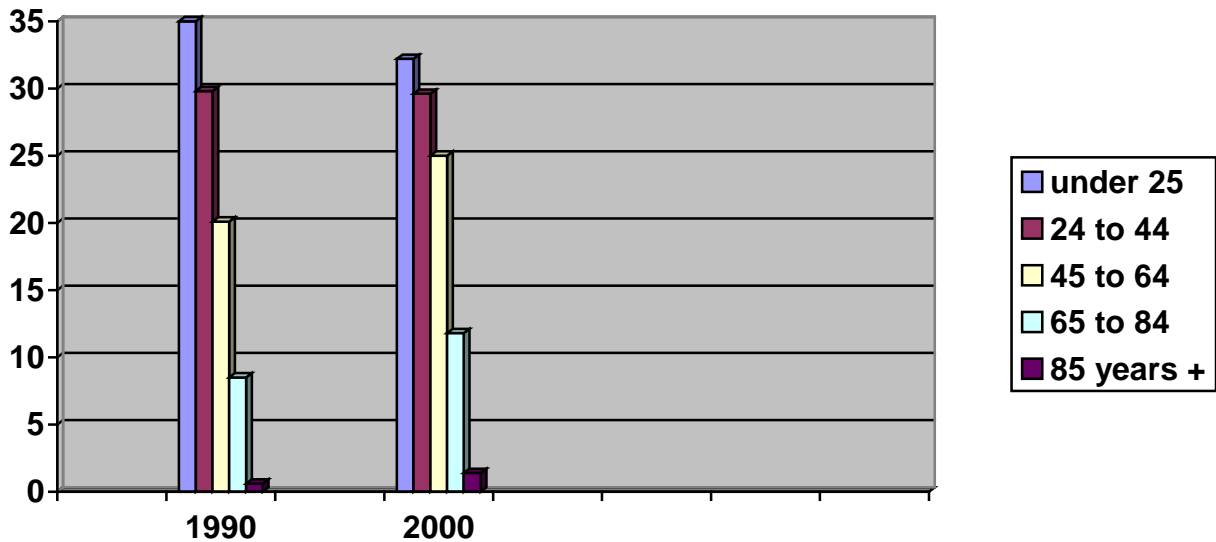
Section 2: Region Economy

The following table and charts show the per capita incomes for Hamblen County and the City of Morristown in 1989 and 1999 and estimates for 2010 and 2015. The existing trends are expected to continue for each municipality and the county, though increases will likely be higher for the City of Morristown.

In looking at per capita incomes one must realize that this purchasing power is largely affected by the in-migration of working-age people, 25 to 64 years of age. Conversely, the higher proportions of young and old people are often associated with lower rates of per capita income growth. The median age in Hamblen County has increased every census year from 1980, 30.7 to 1990, 35.1 and 2000, 37.1. As the region gets older, one could suggest that more recycling will be done in the future that will help to reduce the amount of waste that is going into the landfill. Also, the amount of waste per household will also go down as families get older and children move out of the home.

Ages	1990 Number of People	Percent	2000 Number of People	Percent
Under 25	17,345	41.0	18,724	32.2
24 to 44	15,447	29.8	17,206	29.6
45 to 64	11,652	20.1	14,479	25.0
65 to 84	5,542	8.5	6,919	11.8
85 years and older	494	.6	800	1.4

Age Distribution

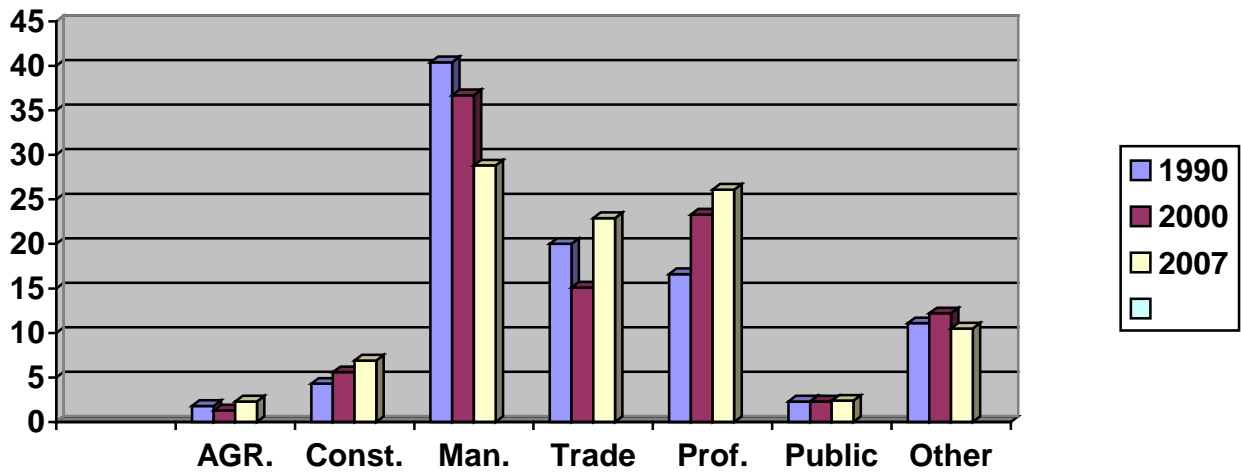


The estimates for the current per capita incomes show that most all entities have experience an increase in the purchasing power of their residents. Most residents are likely to use this increased purchasing power to spend more monies in the future. This is likely to mean an overall increase in solid waste generated by economic growth. Per capita increase of 37% between 1989 to 1999 and 33% between 1999 and 2010 would suggest that the region continues to be the leader in higher paying jobs for the region. Until 1989, the region had a lot of farming in the area that tend to have lower paying jobs and as manufacture jobs came into the area the per capita income became higher for its residents. It should be shown that the per capita income should increase in comparison with the State of about 14% in 2015 that is based on data in the East Tennessee area.

Jurisdiction	1989	1999	2010	2015
Hamblen County	\$11,127	\$17,743	\$26,338	\$30,025
Morristown	\$10,490	\$15,894	\$23,593	\$26,896
Tennessee	\$12,255	\$21,587	\$23,418	\$27,165

The following table takes a look at the types of businesses in Hamblen County that can have an effect in the amount of solid waste being generated. The table looks at the percentage of each classified work from 1990, 2000 & 2007. As the table shows consumer industry has grown. This basically results in less garbage that is produced in terms of large volume. The consumer industry will produce a lot of cardboard and paper that can be recycled. Also, the professional industry that has always been the leader in the region will continue to be the main emphasis on jobs. The waste from these jobs is mostly paper and will not put any extra burden on the waste stream in the future. Jobs have increased from 33,155 to 41,731 during 1990 and 2000 census for Hamblen County.

Industry	1990	2000	2007
Agriculture, Forestry, Fisheries, Mining	1.8%	1.3%	2.3%
Construction	4.3%	5.6%	6.9%
Manufacturing	40.4%	36.7%	28.78%
Trade and Finance	20.0%	15.1%	22.9%
Professional Services	16.6%	23.3%	26.1%
Public Administration	2.3%	2.3%	2.4%
Other (consumer industry)	11.1%	12.2%	10.5%

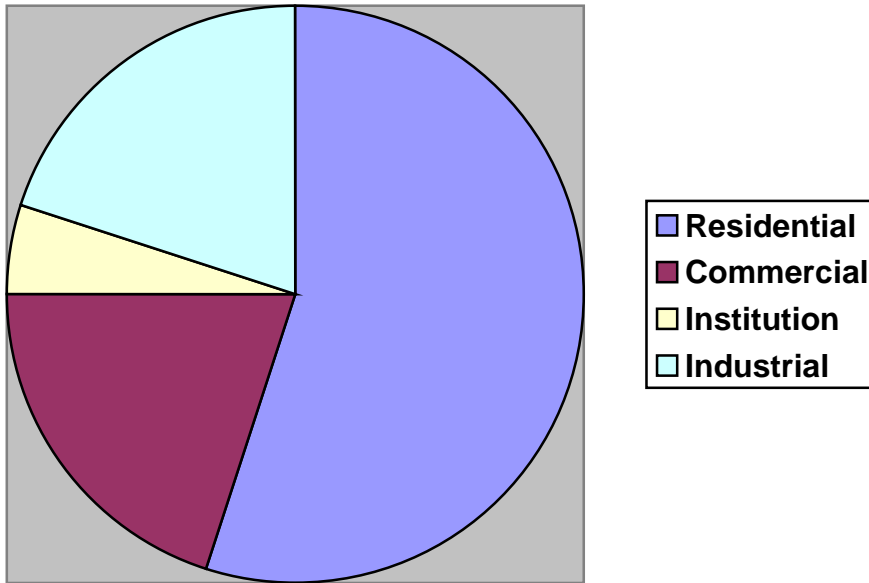


The Hamblen County region continues to lead the way in manufacture jobs for East Tennessee. That trend is against the norm for most of the regions in the East Tennessee that rely more on the service oriented jobs. The recent changes in the economy should affect the manufacture jobs in the region. The shift from more of the labor intensive jobs to the white collar jobs will continue to grow with the development of Walter State Community College. The region of Hamblen County has a high influx of Hispanics into the area that has allowed the agriculture jobs to rise slightly in the last twenty years. The rise of the Hispanic population has created a new challenge for solid waste in that most of these individuals are not accustomed to recycling. It will be interesting to see if the tons per person fluctuates to a higher number in the future needs assessment. The region of Hamblen County tends to be an employment hub with income derived from people commuting into the county to work exceeding the income from people commuting out of the county. This will provide more of a steady climate for future waste being generated in that any new jobs created will not be solely taken by Hamblen County residents that will be building houses and creating more residents in the area that will create more of a burden on the waste stream.

Section 3: Region Waste Stream

Hamblen County solid waste stream is shown below.

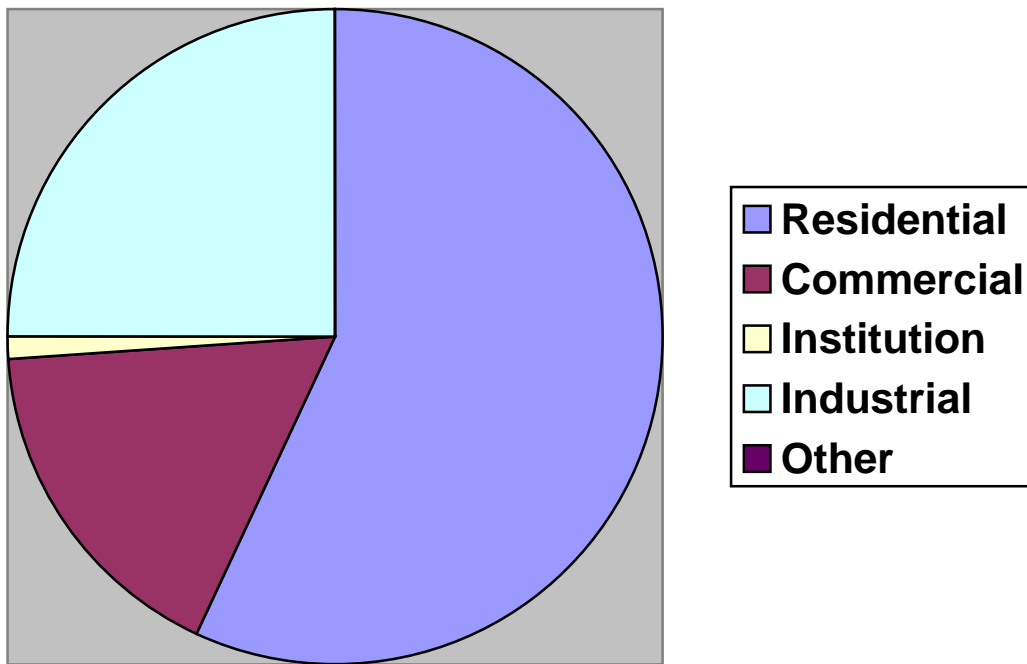
Residential 55%
Commercial 20%
Institution 5%
Industrial 20%



1/01/08

The waste stream during the last needs assessment looked like the following.

Residential 57%
Commercial 17%
Institution 1%
Industrial 25%



4/14/99

/

This can be further broken down into the following:

Recycling – 23,605 – 22%

Composting – 4,537 – 4%

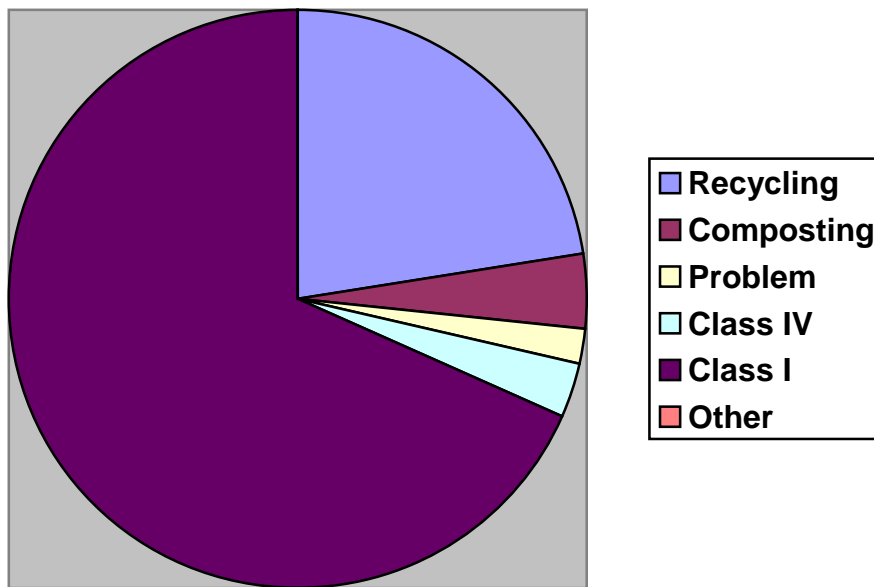
Other – Industrial By-Product – 2,153 – 2%

Problem Waste – 1,309 – 2%

Class IV Waste – 2,891 – 3%

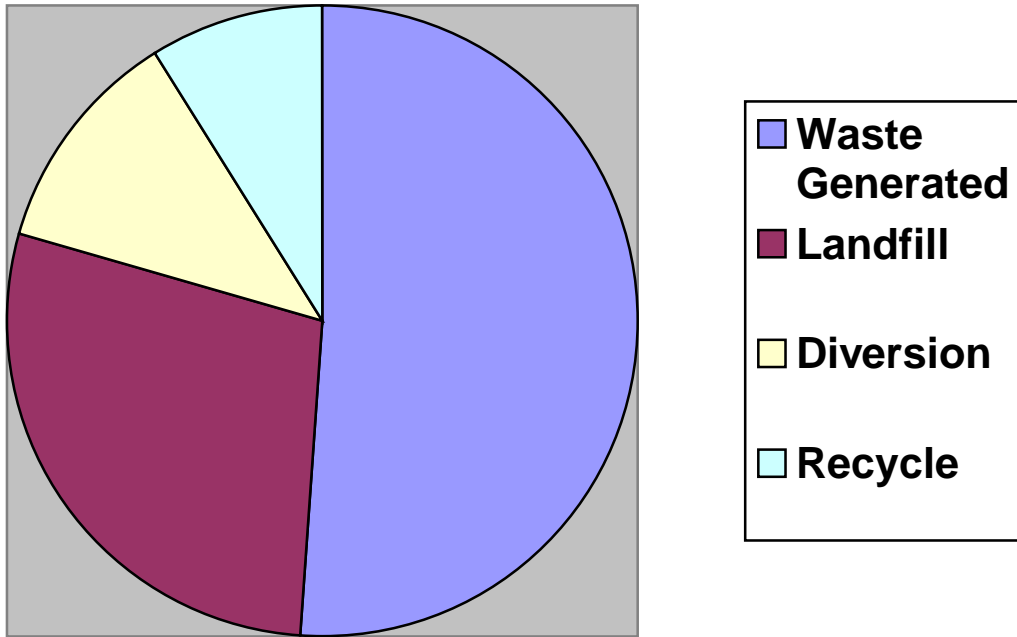
Class I Waste – 71,074 – 67%

Total = 105,569 – 100%

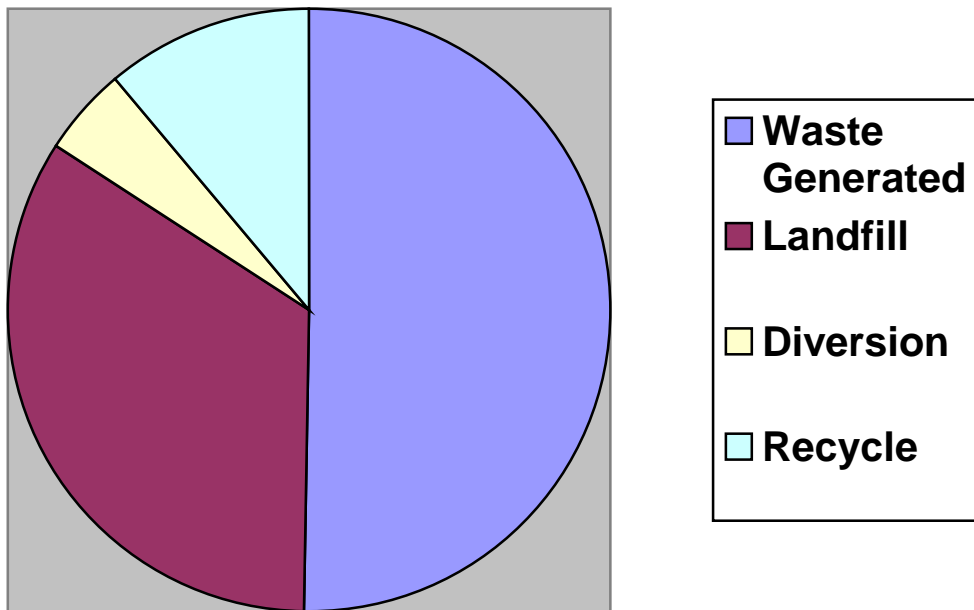


1/01/08

Waste Stream 1998 Totals



Waste Stream 2008 Totals



Waste Stream 2008 Totals

The pie charts show the percentage of waste that has changed from the 1998 needs assessment to the current needs assessment. Landfill waste was shown as 55% in 1998 and is now 67% of the waste. Diversion methods shown as 23% in 1998 are now shown as 9 %, Recycling efforts shown as 18% in 1998 are now shown as 25%. The chart shows that the generated waste has seen a large decrease from 1998 to 2008 of 69,826 tons and that the tons per person has decreased from 1.7 tons per to 1.4 tons per of landfilled waste. The numbers show a distinct difference in the region of Hamblen County from other regions in that the tons per person has diminished and does not coincide with the increase in income earnings in the region. Historical data shows that people with higher paying professional jobs tend to be more environmentally conscious then those with lower paying consumer related jobs.

Hamblen County operates its own Class I landfill and contracts out the running of its Class IV landfill. The Region also has a Class II regional landfill that takes waste from other regions in East Tennessee. The benefit of the Class II landfill to the region is that some of the Class II waste would probably end up in the Class I landfill.. The region currently pays a \$35.00 per ton tipping fee. All of Hamblen Counties waste that is generated in the region is staying within the region and is taken to Hamblen/Morristown landfill.

The components of solid waste are being handled the following way by the entities in the Hamblen County Region.

Class I waste is being handled by house to house collection for both the County residents and the City residents. The County does have one convenience center that is located at the landfill site and that is used for individual garbage for residents that live around the landfill area. The Hamblen County Region is one of only about three in the State that provides house to house collection for all of its citizens. The City of Morristown also collects house to house residential waste. All of the waste from both the County and City collection is brought to the Class I landfill that is owned and operated jointly by Hamblen County and the City of Morristown for disposal. The waste is placed on the tipping floor and then funneled into the baler chute that bales the waste. The baled waste is then taken to the landfill for disposal. The baling operation provides for better compaction and conserves more landfill space. The tipping fee for Class I waste is \$35 per ton. A total of 71,974 tons of waste was collected and transported to a Class I landfill for disposal. No regional waste is accepted and the landfill site.

C&D waste or Class IV waste is taken by residents and contractors to the Class IV landfill that is located next to the Class I landfill site. The Class IV landfill site is owned by the region of Hamblen, but the operation is contracted out to Lakeway Recycling & Sanitation, Inc. No Class IV waste is being handled at the convenience center that is located at the Class I landfill site. The City of Morristown does provide pick-up of some small amounts of Class IV waste for its residents. However, in most cases Class IV waste is transported by contractors or individuals to the Class IV site. The tipping fee for Class

IV waste is \$35. A total of 2,890 tons of waste was collected and diverted from a Class I landfill.

Waste Tires are collected at the Class I landfill site for the Region of Hamblen. A small amount of tires can be dropped off at the convenience center located at the Class I landfill site. Most of these tires are from elderly customers that makes it safer for such disposal. The tires are placed onto an over the road trailer by the landfill attendants and when full an end user is called from processing of the tires. A total of 1,309 tons of tires were collected and diverted from a Class I landfill.

Used Oil is collected at the Class I landfill site or at commercial sites that change your used oil. The oil is then taken away by a private end user. Neither the City of Morristown nor Hamblen County takes used oil at their house to house collection sites. There are no other public used oil collection sites in the region. No used oil tonnage was reported in 2008.

E-Waste was collected as part of a special promotion by the KAB organization twice a year at the Class I landfill site. Residents can bring their materials to the site for disposal and Scott Recycling is used for the collection. Neither the City of Morristown nor Hamblen County offers this collection as part of the house to house collection. An estimated total of 20 tons of electronic waste was collected in 2008.

White Goods / metals are collected at the convenience center at the landfill site. Residents are allowed to dump the materials into a 40 cu.yd open top at the center located towards the entrance of landfill site. Other white goods are collected on a small basis by the County and the City at their house to house collection sites. This is done on a call in basis and is collected based on the elderly or handicapped. The material is stored until a full load is made and a local metal company collects and takes care of the white goods. A total of 413 tons was collected at the landfill site.

Brush / Compost materials are not collected at the convenience center site. The County does have a knuckle boom that will collect brush from the residents. This is done on a call in basis or by site during the house to house collection. The brush is collected and taken to the landfill. The City of Morristown provides a brush collection route that is similar to the recycling route. The brush is collected and taken to the landfill. The brush that is taken to the landfill is placed into an incinerator and burned. Leaves are also picked up by the city along with grass clippings. Those items are taken to a publicly own site by of the cities for disposal. They can be re-used as a composting material. The County also will pick up leaves if they are bagged and they are taken to the landfill for incineration. A total of 4,537 tons was reported by the region of Hamblen County in 2008.

Sewer Sludge is not being collected at any of the convenience center sites. The City of Morristown currently takes their sludge to the Class I landfill. It is estimated that 500 tons a year of sludge is being disposed of in the Class I landfill.

Paint is taken in small amounts at the landfill site and no paint is collected at the convenience center. The paint is then properly disposed of. The City of Morristown requests its residents to donate useable paint to non-profit or schools as a way of disposing of their paint. No paint was reported in the 2008 annual report.

Paper and cardboard is collected at the convenience center located at the landfill site. Hamblen County also provides for the collection of paper and cardboard due to a contract with Goodwill Industries. The residents set out their paper and cardboard for a weekly collection in a single stream. Goodwill Industries also has a processing center located in the County that allows for residents to drop off their paper and cardboard. The City of Morristown also collects paper and cardboard twice a week using a local contractor S&P that picks up the materials and processes the materials. Residents must separate the paper and cardboard from the other recyclables in a blue bag. The County does provide some small pickup of cardboard and paper at the schools, but there is no set program in place. A total of 800 tons of paper and cardboard were collected and properly disposed of in 2008.

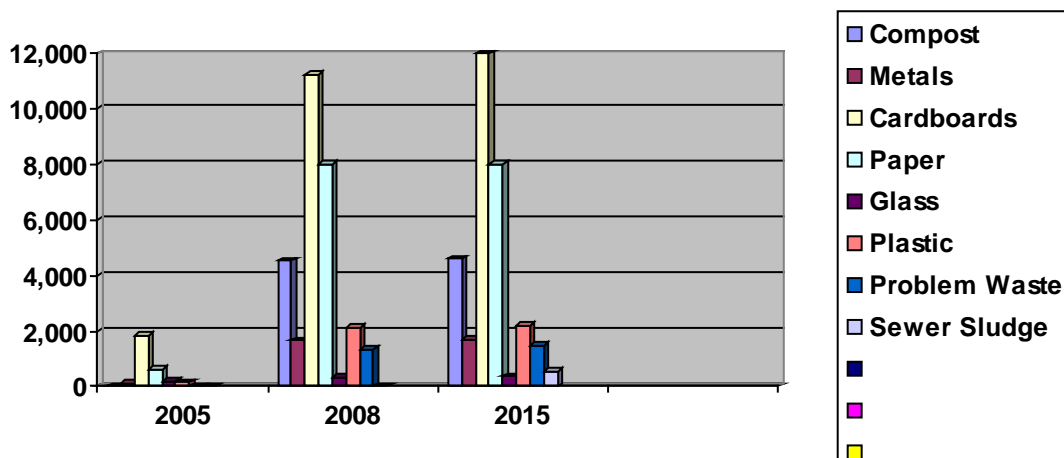
Plastic is not collected at the convenience center at the landfill site. The County does provide house to house collection of plastic. The same single stream process as paper and cardboard is carried out for plastic by Goodwill Industries. The City of Morristown also picks up plastic and it is single streams after separation from paper and cardboard. The same route is run that is used for paper and cardboard twice a month and S&P contractor takes care of the plastic. A total of 167 tons was reported in 2008.

Glass is not collected at the convenience center site at the landfill. Hamblen County provides the same collection for glass single streams as paper, cardboard and plastic. The City of Morristown also provides the same collection house to house of glass as it does for plastic. A total of 237 tons was reported in 2008.

Aluminum Cans is collected at the convenience center located at the landfill site. The County also provides for the collection house to house for aluminum cans. The City of Morristown also provides for the collection house to house for aluminum cans. A total of 31 tons was reported in 2008.

Material	Material – 2005	Material –2008	Material –2015
Sanitation - Land filled	85,935	71,074	62,963
Metals / White Goods	118	1,661	1,700
Cardboard	1,844	11,216	12,000
Paper	629	7,991	8,000
Glass	204	351	360
Plastic	151	2,147	2200
Problem Waste – tires, batteries, automotive fluid, e-waste, paint.	0	1,309	1,500
Sewer Sludge	0	0	550
Compost	0	4,537	4,600
Class II	0	2,153	0
Class III/IV	3,800	2,890	3,000
Total Generated	92,681.00	105,319	90,061

The 2015 number for waste generated is based on the current 1.43 tons per person times the estimated population of 62,980. The landfill number is based on a 30% diversion rate from the landfill. The line item numbers was estimated based on the participation rate of 30%. Currently, the participation rate is 25% for both the County and the City. As more residents become more environmentally sensitive, we feel that the number participating will increase. The recycling numbers will not equal the total generated minus the landfill number due to the industries. Based on suggested new changes this number will become more accurate in the future when industry numbers will not be calculated. The 1.43 tons per person will continue to be the same based on new population shift of Mexican/Americans that are not used to recycling. Below is the numbers for materials that are not being land filled in either Class I or Class IV.



Section 4: Waste Collection System and Life Cycle

The Region of Hamblen County utilizes (1) convenience centers to collect Class I waste that is located at the landfill. The rest of the collection is down house to house for all county residents. The residents waste is picked up once a week using a semi-automated system and the waste is taken to the Class I landfill in region. The City of Morristown also collects house to house for Class I waste and their waste is also taken to the Class I landfill in the region. The City of Morristown also utilized a semi-automated system for its collection. A tipping fee of \$35 a ton is charged for disposal of Class I waste Class IV waste can be taken by residents to the Class IV landfill in the region for disposal. The Region does not provide collection sites for the disposal of Class IV waste. Hamblen County and City of Morristown does provide occasional collection of Class IV waste from residents during annual or semi-annual cleanups. The tipping fee charge for Class IV waste is \$35 per ton.

The citizens of Hamblen County can have their brushed picked up by the County on a call in basis. The City of Morristown provides a brush collection route. All of the brush that is collected is taken to the landfill for incineration. Leaf collection is done by the City of Morristown on a collection route and the waste is taken to a publicly owned site for disposal. The leaves can later be used for mulching purposes. The County will pick up brush, if it is bagged.

Tires are collected at the Class I landfill site. The tires are placed into a trailer and hauled to an end user by the contracted company. A small amount of tires are accepted at the Convenience Center to assist the elderly or handicapped. The City of Morristown does not provide for the collection of tires.

White Goods can be dropped off at the Class I landfill site. The County will provide for the collection of white goods during clean up days. The City of Morristown does provide year round collection of white goods for their residents. All white goods are taken to the Class I landfill site and are collected by a private local end user.

Recyclable items are collected house to house by both Hamblen County and the City of Morristown. The items collected are handled by the contractor at their processing center. Hamblen County also provides for the collection of cardboard at the convenience center at the landfill site. There are two private recyclers operating in Hamblen County: S & B Recycling in Morristown, and Goodwill Industries, located in Russellville.

Used oil is can be taken to the landfill for disposal. The used oil is then collected by an end user. No other public collection sites are available in the region.

E-waste is collected at the landfill site on special collection days that are organized by the Keep America Beautiful affiliate for Hamblen County. No other e-waste collection sites are available.

Paint is collected in a small amount at the landfill site. The convenience center does not allow for paint to be dropped off and no other collection of paint is done in the region. The paint is disposed of in the Class I landfill.

Sewer Sludge is currently being disposed of in the Class I landfill site.

Section 5: Hamblen County Reduction Rate

Current Year Generation	Current Year Disposal	Base Year Disposal	Current Year Population	% Reduction compared to Base Year	Real Time Comparison
105,319	71,074	116,340	58,128	39%	33%

The Region of Hamblen County currently meets the 25% waste reduction goal in 2008 as shown in the table above. Below is an illustration on what items are needed that will help the region to continue to meet the 25% waste reduction goal.

Class IV waste is continues to provide a waste reduction of about 2,890 tons a year. The price between Class I and Class IV is the same, so it does not promote the use of the Class IV landfill as an incentive in money saved. However, all loads are examined upon entering the Class I landfill and waste will not be allowed, if it should be taken to the Class IV landfill site. There are really no changes that need to be done in regards to operating the Class IV landfill. The region has done a good job in letting residents and companies know what items are accepted at the Class IV landfill. Transportation for waste for the Class I and the Class IV site are identical being located next to one another, so as not to put an extra transportation cost on Class I or Class IV waste.

Waste Tires are being handled efficiently by the region. The Hamblen County Region is one of a few regions that allow commercial businesses to take their tires to the public own site.

Used Oil drop offs are needed throughout the region of Hamblen County. The fact that house to house collection is done for recyclables rather than convenience centers that allow for drop off sites makes it difficult to have used oil drop off sites. The landfill site is centrally located for residents in the region and that will have to handle the region. The only other public owned sites that could handle public used oil drop off sites would be the schools. The logistics and the land available for such sites will probably make this an unlikely happening. One can estimate an additional **600 gallons** of used oil can be collected with more collection sites.

E-waste will continue to increase in the future. The Region has a very good program and does an excellent job in letting people know about the program. The collection of e-waste as part of the house to house collection of recyclable in the region is the only way that the region could collect more e-waste. Don't see any deficiency in the program that could create more waste.

White Goods / metals are being collected at the landfill site and by the City of Morristown. The County does provide collection on special events or clean up days. The process seems to be working fine and no changes are needed in order to increase the participation.

Brush / Compost materials are being collected by the City of Morristown. The County provides a site for the brush and its disposal. The collection of brush is not a problem that needs to be dealt with in the future. However, the method of disposal could cause a problem in the future in the items that can be counted towards waste reduction. As long as incineration of brush is allowed then the region should not have a problem. The collection of leaves and the use of leaves by the City for mulch is an acceptable practice that will continue in the future.

Paint is an area that the region will need to expand in the future. The collection of paint creates a problem due to the house to house collection by the County and City of recyclable items. The region cannot collect paint house to house and the landfill site is not equipped to handle large amounts of paint. Until waste reduction goals become a concern in terms of meeting the required goals. I do not see the region putting too much of an emphasis on the recycling of paint, due to the cost. The region is constantly faced with dwindling budgets that look at the cost of recycling door to door every year as a way to trim the budget.

Sewer Sludge is currently not being prepared to be diverted from the Class I landfill. It is estimated that nearly **550 tons** of waste could be diverted from the landfill through land applications. The Region is currently working on a regional wastewater plant that will take waste from a lot of area industries. This might prompt the Region to look at making land application a priority in the near future.

Paper and cardboard is collected by both the County and the City by house to house collection. Both entities have stated that they have a 25% participation rate. One resident that lives in the City stated that if the City would provide containers that the participation rate would increase. Also, the city requires that the paper and cardboard to be separated from the other recyclable items. By going to a single stream could also increase the participation rate. The City constantly debates the usefulness of recycling when it comes to balancing the budget each year. In order to keep house to house recycling from being eliminated the City may need to look at a user fee for the collection of their waste. The user fee could possible be structure to provide incentives or price breaks for those that choose to recycle. The County seems to be on more stable grounds in terms of budgeting for house to house collection of recyclable items. Although, they provide for a single stream collection, their participation has also been around 25%. The only area that the region has not really gone after is the schools in terms of recycling. That is a new area that the region can look at in the near future and should produce an additional **125 tons** a year. All of this being said, the region needs to be commended for its recycling efforts. The county is one of only a handful across the state that provides for collection of recyclables house to house.

Plastic is collected house to house in all areas of the region that includes Hamblen County and the City of Morristown. I see no areas that the Region can participate in to increase the recycling efforts of plastic. The only area would to provide a pay as you go reward incentive that some areas have started. The volume of weight that plastic has will probably not increase the recycling efforts of plastic.

Glass is also collected house to house by Hamblen County and City of Morristown. The recycling reward system would pay great dividends on glass collection due to its volume of weight. Some regions are using glass to help on their roads and that might be something that the Road Supt. could look at in the future. Special efforts to collect glass at restaurants and beer packaging places would provide for the collection of more glass in the future.

The region of Hamblen County has long been a leader in recycling efforts in East Tennessee. The region has led the way with their marketing and education efforts toward recycling. A good example of this progressive attitude is that when the Hispanic population continued to rise in the region. The Keep America Beautiful created brochures and pamphlets in Spanish to let these individuals know the importance of recycling, such importance that has not been dealt with in other countries in Central America.

Section 6: 10-Year Regional Disposal Assurance in Hamblen County Region.

Site Name	Annual Tons Disposed by Hamblen County	SNL Permit #	Current Landfill Capacity (daily throughput)	Maximum capacity	Projected Life of Facility
Morristown/Hamblen Class I Landfill	71,074	SNL-32-0152	194 tons per day	Depends on compaction rate and Landfill Design and Operations Plan	7 years left

Site Name	Annual Tons Disposed by Hamblen County	SNL Permit #	Current Landfill Capacity (daily throughput)	Maximum capacity	Projected Life of Facility
Lakeway Recycling & Sanitation Inc.	2,890	DML-32-0100	12 tons per day	20 tons per day	20 years remaining

Public and Private Collection Service in the Hamblen County Region

Service Provider	Service Area	Frequency of Service	Estimated average annual tons collected	Type of Service
Hamblen County	County Wide	Once a Week	46,922	Door to Door Collection
Morristown	City Limits	Once a Week	37,702	Door to Door Collection

** Estimated tonnage is based on 1.41 tons per person time's population of entity.

Hamblen County collects recycling also on a house to house basis. The county will collect in a single stream, cardboard, mixed paper, plastic and glass. The City also collects recycling on a house to house basis that is done twice a month. The City does require cardboard and paper to be separated from the rest of the recyclable materials. The city collects Aluminum and Steel Cans, Plastic, Glass, Paper and Cardboard.

All commercial and industrial establishments contract out the collection of their waste with private haulers. Some small commercial establishments are provided collection by the City and County based on a couple of bags generated per week.

Section 7: Solid Waste Management Infrastructure

Hamblen County

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$721,315	\$0	\$721,315
Transportation/hauling	\$0	\$	\$
Collection and Disposal Systems			
Equipment	\$249,435	\$385,000	\$634,435
Sites	\$	\$	\$
Convenience Center	\$	\$	\$
Transfer Station	\$	\$	\$
Recycling	\$67,697	\$0	\$67,697
MRF	\$	\$	\$
Landfills – Disposal Charge	\$747,554	\$0	\$747,554
Site	\$	\$	\$
Operation	\$	\$	\$
Closure – See total under post closure	\$	\$	\$
Post Closure Care	\$	\$	\$
Administration (supplies, communication cost, etc.)	\$157,110	\$0	\$157,110
Education	\$	\$	\$
Public	\$2895	\$0	\$2895
Continuing Education			
Capital Projects	\$261,045	\$0	\$261,045
Total	\$2,207,051	\$385,000	\$2,592,051
Revenue			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$1,128,244	\$0	\$1,128,244
Sales tax	\$1,078,807	\$0	\$1,078,807
Surcharges	\$0	\$0	\$0
Disposal fees	\$0	\$0	\$0
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 Recyclables	\$0	\$0	\$0
Other sources: (Grants, bonds, interest, sales, etc.)	\$67,312	\$0	\$67,312
Total	\$2,207,051.00		\$2,207,051.00

Equipment: Replace one semi-automated refuse truck and one rear loader truck.

City of Morristown

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$561,760	\$0	\$561,760
Transportation/hauling	\$	\$	\$
Collection and Disposal Systems			
Equipment	\$152,509	\$0	\$152,509
Sites	\$	\$	\$
Convenience Center	\$	\$	\$
Transfer Station	\$	\$	\$
Recycling Contract	\$205,174	\$0	\$205,174
MRF	\$	\$	\$
Landfills – Disposal Charge	\$685,868	\$0	\$685,868
Site	\$205,000	\$0	\$205,000
Operation	\$	\$	\$
Closure – See total under post closure	\$	\$	\$
Post Closure Care	\$	\$	\$
Administration (supplies, communication cost, etc.)	\$	\$	\$
Education	\$	\$	\$
Public			
Continuing Education			
Capital Projects	\$0	\$230,000	\$230,000
Total	\$1,810,311	\$230,000	\$2,040,311
Revenue			
Host agreement fee	\$	\$	\$
Tipping fees	\$	\$	\$
Property taxes	\$1,605,378	\$0	\$1,605,378
Sales tax	\$242,000	\$0	\$242,000
Surcharges	\$	\$	\$
Disposal fees	\$	\$	\$
Collection charges			
Industrial or Commercial charges	\$	\$	\$
Residential charges	\$	\$	\$
Convenience Centers charges	\$	\$	\$
Transfer Station charges	\$	\$	\$
Sale of Methane Gas	\$	\$	\$
Other sources: (Grants, bonds, interest, sales, etc.)	\$37,000	\$0	\$37,000
Total	\$1,884,378	\$0	\$1,884,378

Equipment: Semi-Automated truck.

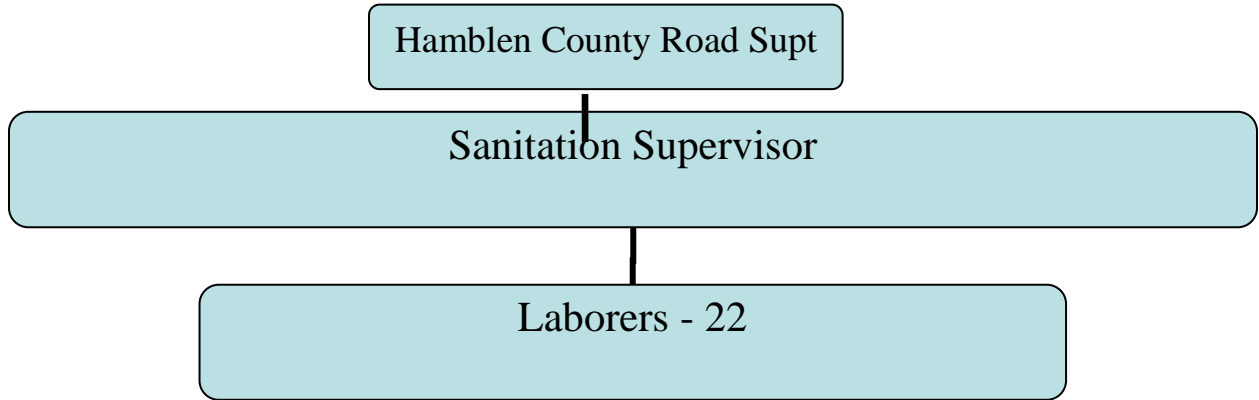
Hamblen Co. / Morristown Solid Waste System

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$776,614	\$0	\$776,614
Transportation/hauling	\$43,726	\$0	\$43,726
Collection and Disposal Systems			
Equipment	\$217,102	\$500,000	\$717,102
Sites	\$	\$	\$
Convenience Center	\$	\$	\$
Transfer Station	\$	\$	\$
Recycling Center	\$	\$	\$
MRF	\$	\$	\$
Landfills	\$60,492	\$0	\$60,492
Site	\$160,128	\$0	\$160,128
Operation	\$140,093	\$0	\$140,093
Closure	\$178,026	\$0	\$178,026
Post Closure Care	\$	\$	\$
Administration (supplies, communication cost, etc.)	\$164,789	\$0	\$164,789
Education	\$	\$	\$
Public			
Continuing Education			
Capital Projects	\$	\$2,000,000	\$2,000,000
Depreciation	\$703,979	\$0	\$703,979
Total	\$2,444,949	\$2,500,000	\$4,944,949
Revenue			
Host agreement fee	\$	\$	\$
Tipping fees	\$	\$	\$
Property taxes	\$	\$	\$
Sales tax	\$	\$	\$
Surcharges	\$	\$	\$
Disposal fees	\$2,700,000	\$0	\$2,700,000
Collection charges			
Industrial or Commercial charges	\$	\$	\$
Residential charges	\$	\$	\$
Convenience Centers charges	\$	\$	\$
Transfer Station charges	\$	\$	\$
Sale of Methane Gas	\$	\$	\$
Other sources: (Grants, bonds, interest, sales, etc.)	\$240,000	\$0	\$240,000
Total	\$2,940,000	\$0	\$2,940,000

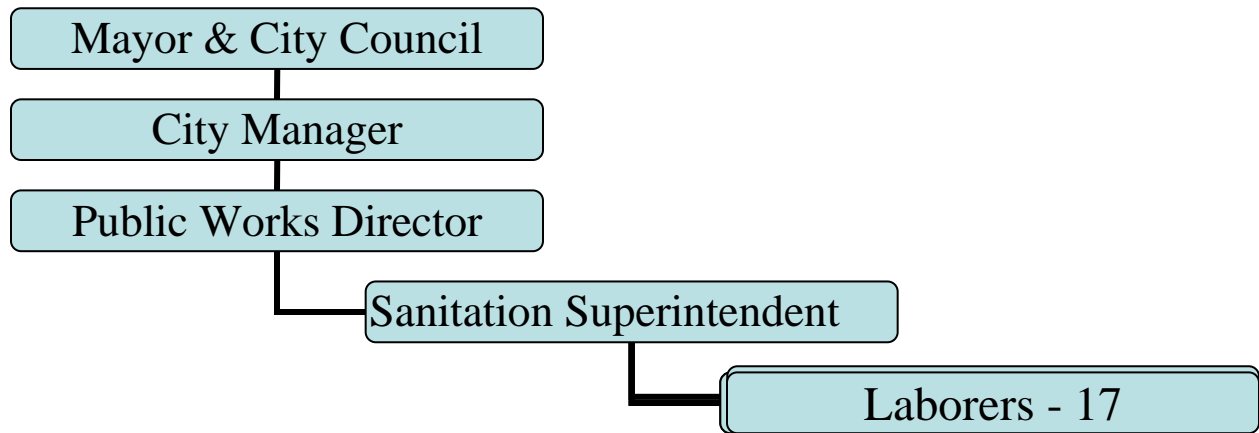
Equipment: Rubber Tire Wheel Loader = \$150,000; Track Dozer = \$350,000
 Capital Project: Gas to Energy Project = \$2,000,000 or partial closure cost.

Section 8: Solid Waste Department Organization and Location

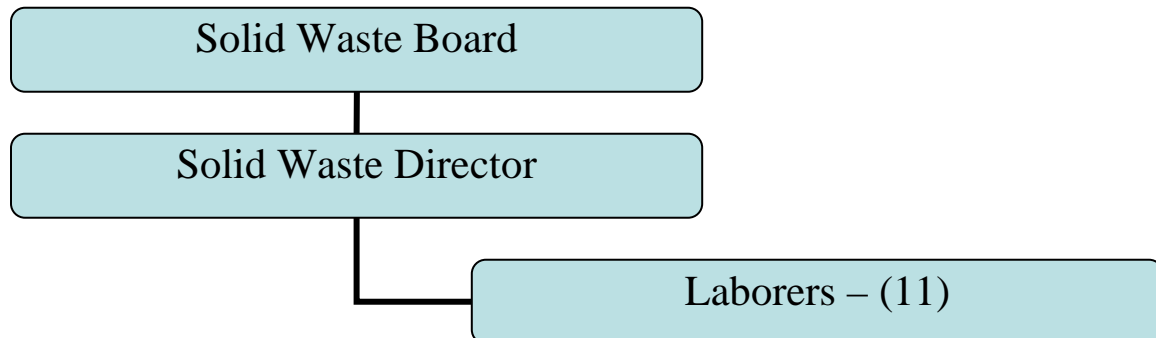
Hamblen County



City of Morristown



Hamblen County /Morristown Solid Waste System



Section 9: Future Waste Management Needs

Hamblen County Region

Collection

Equipment	Operational Use	Estimated Cost	Potential Revenue Source	Entity
Semi-Automated Truck	Solid Waste	\$230,000	In-House	Morristown
Semi-Automated Truck	Solid Waste	\$230,000	In-House	Hamblen County
Rear Loader Truck	Solid Waste	\$125,000	In-House	Hamblen County

Disposal

Landfill Equipment	Operational Use	Estimated Cost	Potential Revenue Source
Track Dozer	Solid Waste		In-House
Rubber Tire Wheel Loader	Solid Waste		In-House
Site			
Partial Closure	Solid Waste	\$2,000,000	In-House
Gas to Energy	Solid Waste	\$2,000,000	In-House

The Region of Hamblen County has most of its solid waste management needs met in the upcoming five years. Both the County and the City has mentioned the need within the next five years to replace vehicles for the collection of solid waste. The Landfill has to start doing a partial closing of an existing landfill within the next three years. The Solid Waste Board is looking at a gas to energy program that could allow them to not only sell energy, but utilize the energy converted on site to lower utility bills. The price tag is steep and they are doing a study to see if it would pay off in the future and how long it will take to realize a positive dollar flow on their initial investment

Section 10: Residents Attitude and Participation

No formalized surveys have been done to measure the public's attitude of Hamblen County residents concerning support for environmental programs. The mindset of the people is changing as the population gets older as illustrated by the reduction in the tons per person in the region from 3.28 in 1998 to .55 in 2008. The region has made great strides in reducing the amount of waste that is being generated. It needs to be noted that some of the waste accounted for in 1998 was from industries that now take their waste to a Class II landfill. The region under the initial tutelage of Sami Barile, now the Mayor of Morristown was given many awards and acknowledgment for their efforts in educating the public in recycling. The region is one of the few in the State that provides house to house recycling for all of its residents. The region has gone out of its way to make recycling available for its residents. However, both the County and the City report about a 25% recycling rate. Most residents that were casually asked about recycling agree that everyone needs to do their part in saving the environment. However, most are not willing to go out of their way to recycle. The word convenience tends to come in mind towards the reaction towards recycling. Most feel it is the government's job to provide recycling opportunities and that it should be left up to that person to choose to do so. A resident for the City of Morristown stated that if they provided a container that they would recycle. Currently, the resident must place the recycling in a blue bag for the city to pick up. As the school age children become older and they are use to recycling items at school a habit of recycling will dictate the increase in public participation in the future. Recycling rates have increased in the region and the percentage of waste being disposed of in a Class I landfill has decreased versus the amount of waste generated.

A list of events that were pulled off the Keep Morristown/Hamblen Beautiful web site shows that the region is doing all it can to educate and give residents the opportunities to recycle. The events included Household Hazardous Waste event, Electronic Recycling Event, Funk Art Contest – where students from the 3rd to the 8th grade made art out of recycled materials, Arbor Day Poster and Poetry Contest. Teacher in-Service training and litter free recycling events. Similar to most regions in East Tennessee, the growth of recycling efforts will come from the youth. The Region of Hamblen realizes this and has a youth advisory board that develops programs for the youth in the area.

Item # 11: Regional Solid Waste Plan / Executive Summary

The Hamblen County Region's plan for the next five years is to continue to find ways to expand services within their recycling program. As part of the needs assessment, I will take a look at every area of the solid waste stream to give my thoughts on the needs in those areas.

Class I waste collection is currently being handled on a door to door basis for all residents in the region. The region owns and operates in own landfill. The lack of any major dumps in the area illustrates that solid waste collection is being taken care of in the region. Hamblen County and Morristown provide their own equipment and set up their own collection routes for its citizens. The region charges \$35 per ton that is collected by a separate solid waste board that manages the landfill. The board acts like a solid waste authority, but does not have all of the legal rights associated with an authority. By having a separate board that is made up of residents of both the County and the City allows the landfill to not get lost in budget proceedings. The landfill has its own budget and can project needs in the future. One of the needs in the upcoming year is to begin partial closing of the existing landfill. The landfill board is also looking at a gas to energy program that could save the region money in the future. The landfill will continue to utilize the baling system to save space at the landfill and that has been a very good investment for the region. There should be no changes in the way that the landfill is operated in the future.

Class IV waste is being operated by a private company in the region. The landfill is owned by the region in a joint agreement with Lakeway Recycling & Sanitation. The Class IV landfill tipping fee is \$35 per ton. My first thought was by charging the same for Class I waste and Class IV waste; there is no incentive for residents to divert waste from the Class I landfill. Those thought were diminished due to the fact that all waste entering the Class I landfill must go across the scales. The waste must be identified and can be checked by the attendant, if needed. The landfills are right next to each other, so transportation costs are not an issue. There should be no changes I the next five year reporting period and the operation of the Class IV landfill seems to be working fine.

Class II waste is being handled wit the operation of a Class II landfill that diverts waste from the Class I landfill. The private investment has been good for the region. The only reason it is mentioned in this report is to show that there is another means to divert waste. The operation will remain and should remain private in the next five year reporting period.

Waste Tires are being handled efficiently by the staff of Hamblen County and have a central location for the collection and storage of the tires at the Class I landfill site. The region is one of a few regions that allow commercial tires to be taken to the public own site for disposal. That shows a commitment by the region to collect and divert as much waste from a Class I landfill and feasibly possible. The region has a contract with Mac Tires to dispose of the tires when a trailer load is collected. The State probably needs to provide more funding for this program, but other then that there is no reason to change what is being done for the collection of waste tires.

The region has relied on private sites for used oil collection and it is hard to see how effective that is. There is no outcry by the citizens that there are no public sites to dispose of their used oil. The region may want to look at more public collection in the future, if not for any reason other than being able to use the used oil for heating of buildings. The landfill site is the only public site that collects used oil and that oil is taken away by an end user.

E waste is something that the region has added since the last reporting period. The program is being spear headed by the Keep America Beautiful affiliate in Hamblen County. The region has electronic recycling events throughout the year and coordinates with an end user for the proper disposal. Hamblen County and the City of Morristown will collect small amounts during annual clean-up days as part of their door to door collection of solid waste. The program seems to be working fine and no changes are anticipated in the new five year reporting period.

White Goods and metals are also collected and stored at the Class I landfill site. The City of Morristown and Hamblen County will collect some white goods on a case by case basis during the door to door collection of waste. This is one area that by not having convenience centers in the region can effects the amount of white goods collected. This; being said, one can go back to no major dumps as the result of not having public collection sites in the region for white goods besides the one located at the landfill. I am very impressed with the region for having house to house collection of recyclables in both the County and the City. I would in no way suggest having convenience centers to replace the current collection of such materials.

Brush/Compost is one area that the region might have to change in terms of disposal in the future, depending upon Federal and State regulations. The disposal of brush is currently being done using an incinerator. This is not an environmentally acceptable way, but it does divert waste from the landfill. Brush and leaves are being collected for residents by both Hamblen County and City of Morristown. There are no changes needed in the collection of brush. The City of Morristown does take their leaves to another site other than the landfill site and use that material as mulch. The region may need to look at a tub grinder in the future as a more acceptable method of disposal of the brush. However, any such expenses would probably result in eliminating door to door collection of recyclables and that is not a wanted trade off. No changes in the upcoming five year reporting period are expected.

The region currently landfills their sewer sludge. The region has a wastewater plant that is looking at becoming a regional source for industries. This might prompt the region to look at another avenue rather than landfill disposal based on the tipping fee cost in the future. Until the new wastewater plant regional plant comes to fruition don't expect any changes to the current system. Based on what I've seen there is no real need to make any changes at the present time.

The collection of paint is something that the region has lacked in comparing to other regions in the area. The region does try to promote reusing left over paint and to provide such paint to non-profits by individuals. The landfill does take small amounts of paint

and that paint is landfilled. In order to provide a paint recycling for the region would require a new building and additional manpower. Both of these activities will not happen with budget constraints at the present time. I don't see anything done with paint in the next reporting period, unless there is an outcry from the citizens. Seeing the 25% participation rate at the present time in the collecting of recyclables, such outcry is highly unlikely.

Paper and cardboard collection is provided by way of a house to house collection system by both Hamblen County and the City of Morristown. The collection is contracted out with a private firm that provides for the collection and the processing of the materials. The current process seems to be working fine with the exception of the 25% participation rate. The region may look at some incentive program in the future, but must keep the price of the contract at the current rate for fear of losing the contract during next years budget meetings. The region could look at extending the contract to include the schools that would provide more recyclables collected. The county does provide some collection of paper and cardboard at the schools utilizing their own workforce.

The collection of glass and plastic is also made available by the County and the City as part of their house to house collection of recyclable materials. Besides coming up with a way to increase the 25% participation rate, there are no need to change the program and how it is operated. The region could look at other uses for glass such as for roads in the future. If this was deemed to be acceptable, then the region may find it profitable to collect glass from commercial establishments.

In summary, the region has met the 25% waste reduction goal that is mandated by the State. The region will continue to not have a problem in meeting the waste reduction goals by the State as long as current diversion efforts are allowed. It is debatable if the region could meet the waste reductions goals on recycling efforts without the use of the Class IV landfill and the incineration of brush. As is the case in all regions there are still things that can be done to further enhance the diversion of waste from a Class I landfill. The economy has slowed down those changes and will place more of a cost benefit analysis on future programs during the next needs assessment period. The region has came along way since the last needs assessment and will continue to reach their goal of having one of the most comprehensive recycling programs in the East Tennessee Region.

Sources:

Hamblen County/ Morristown Solid Waste System

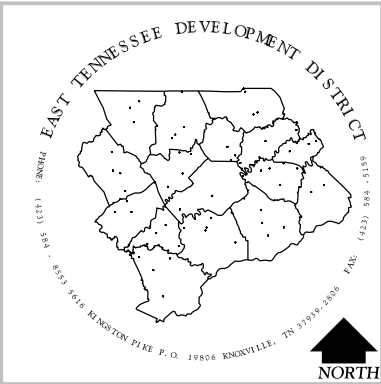
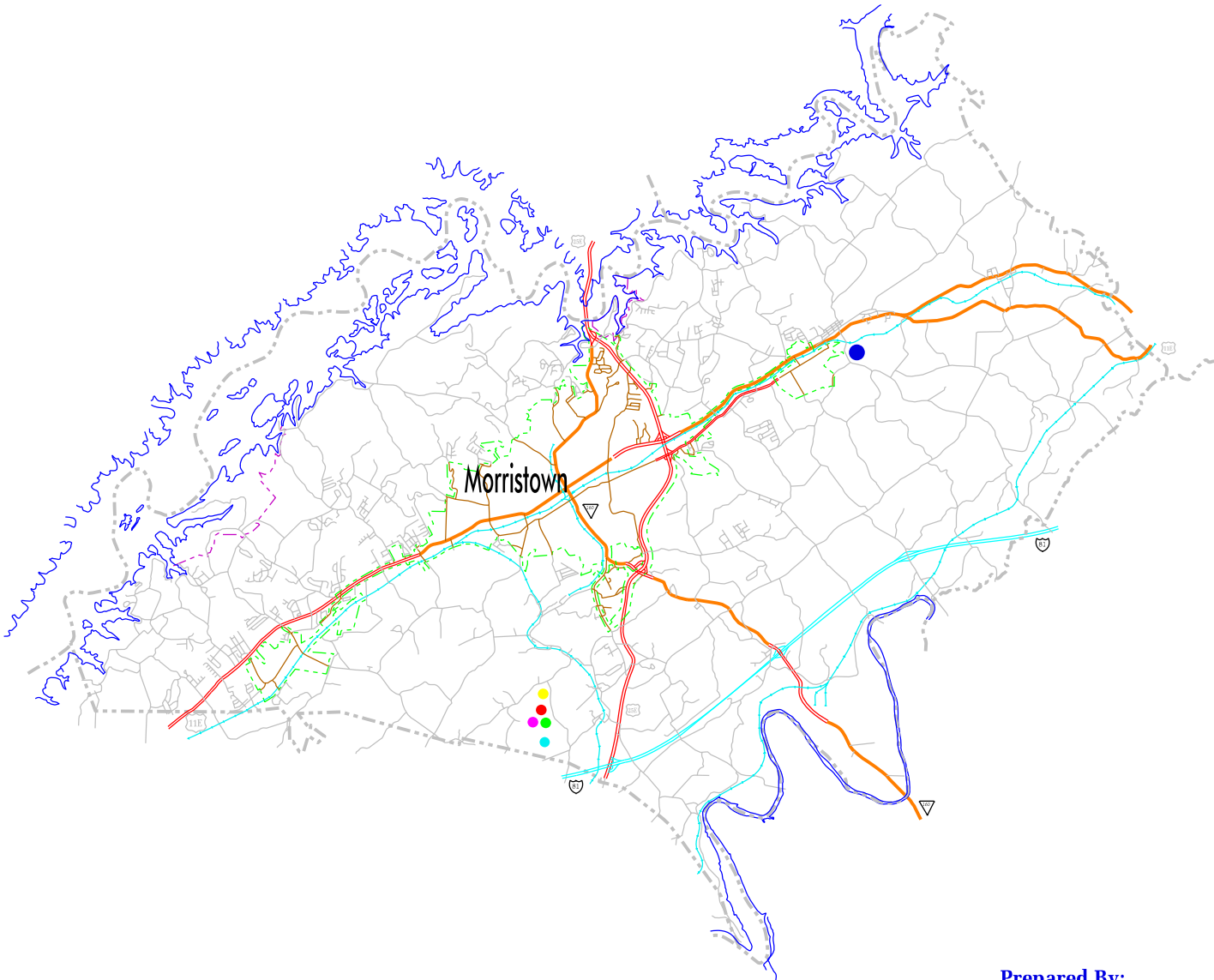
City of Morristown

U.S. Census Bureau

Hamblen County

Tennessee Division of Solid Waste Management

Headwaters Economics



LEGEND

HAMBLEN COUNTY REGIONAL SOLID WASTE MAP

Legend

- Class I Landfill
- Class IV Landfill
- Incinerator
- Material Processing Center
- Class II Landfill
- Convenience Center

Prepared By:
East Tennessee Development District

