

**Claiborne  
Solid Waste  
Needs Assessment  
2011**

**Item # 1 Demographic Information**

The following table and charts illustrate the population trends of the region, which includes respective municipalities, total municipal residents and county only residents. The 2010 and 2015 projects are based on existing trends for each jurisdiction as well as knowledge of the area.

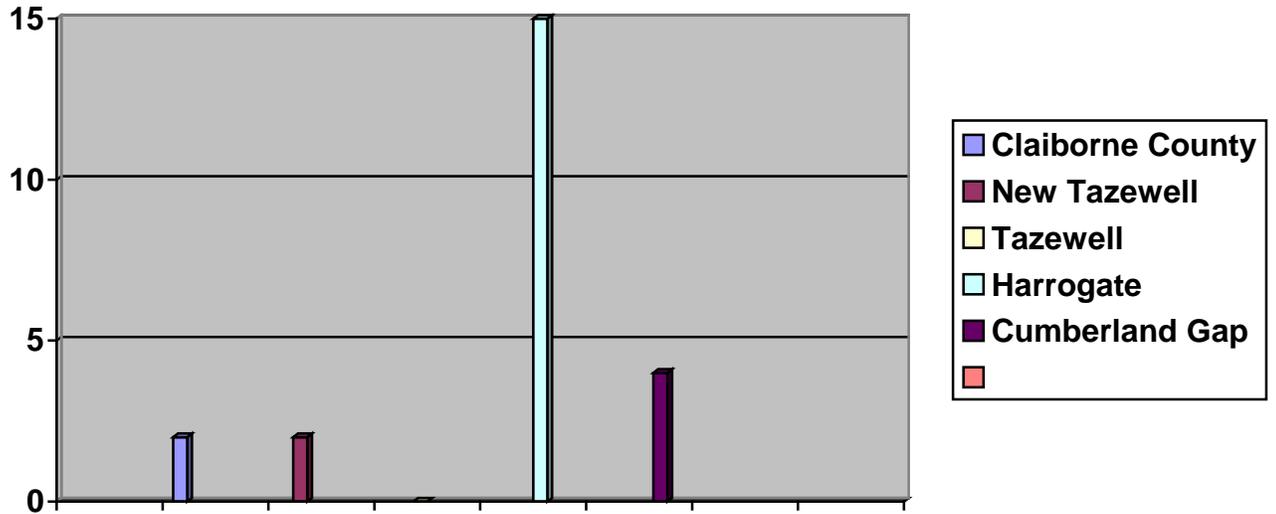
The county as a whole is expected to continue to increase in population between 2000 and 2015. Claiborne County has seen its average growth below that of East Tennessee and the State. Claiborne County will continue to see modest growth during the next needs assessment time period that should keep the solid waste issues manageable in the future.

The entities of the region will see the following growth. The City of New Tazewell after initial growth due to annexation has leveled off and will see about a 5% growth during the next needs assessment. The City of Tazewell will see a slightly lower growth of 3% over the next needs assessment. The City of Harrogate had an enormous growth due to annexation in 2010 will also see a lower growth of 4 % in the next needs assessment. The Town of Cumberland Gaps numbers will always be skewed due to the number of people in the Town. A family leaves can greatly affects those numbers. There are no known factors over the next needs assessment that should greatly affect the forecasted growth in the area. The region of Claiborne County is not going to see large increase in population in the future unless economic amenities are apparent, such as a new industrial plant that will affect population spurts. Such growth will be shown in the single family dwellings. 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. Based on past history, Claiborne County should not see any large increases that would affect their waste stream to the extent of making it un-manageable.

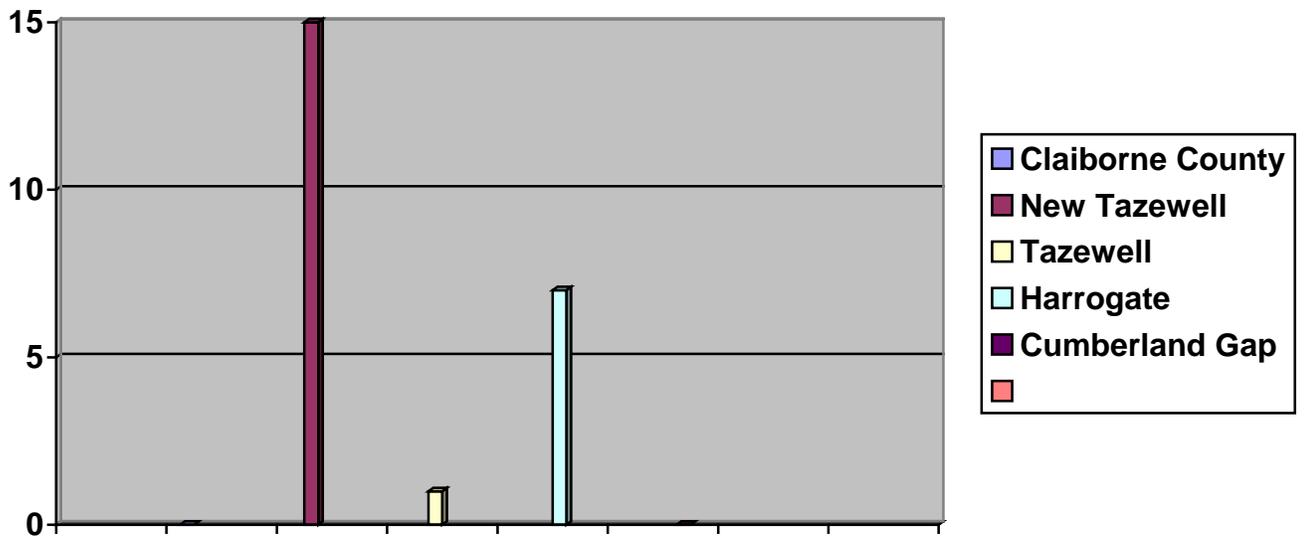
Jurisdiction	1990	2000/% change	2010 / %	2020 / %
Claiborne County	21,913	21,757/0%	22,252 / 2%	23,306 / 5%
New Tazewell	1,864	2,871/35%	2,931 / 2%	3,078 / 5%
Tazewell	2,150	2,165 / .7%	2,159 / 0%	2,230/ 3%
Harrogate	2,657	2,865 / 7%	4,053/ 29%	4,234 / 4%
Cumberland Gap	210	204/0%	212/4%	223/5%

## ***Claiborne County and Cities***

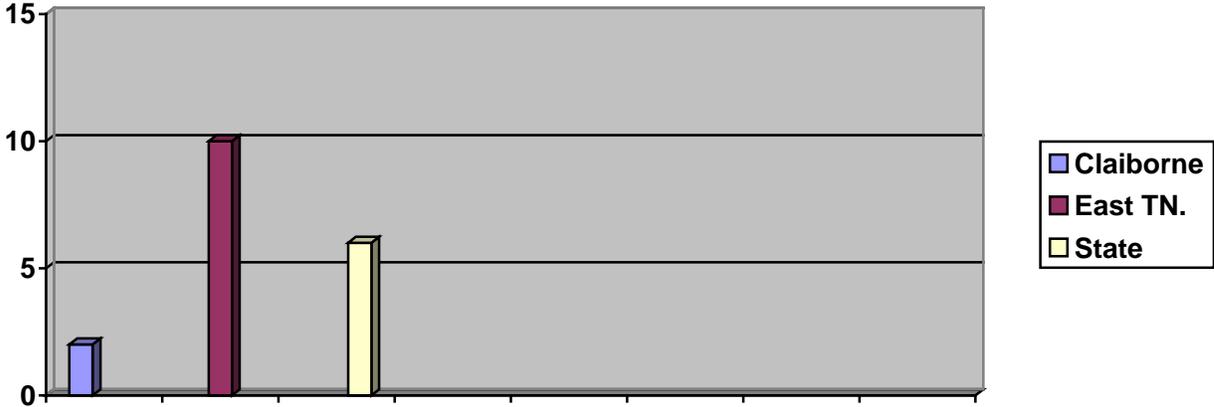
***Population Growth Percentage: 2000 - 2010***



***Population Growth: 1990-2000***



# Population Growth: 2000 - 2010



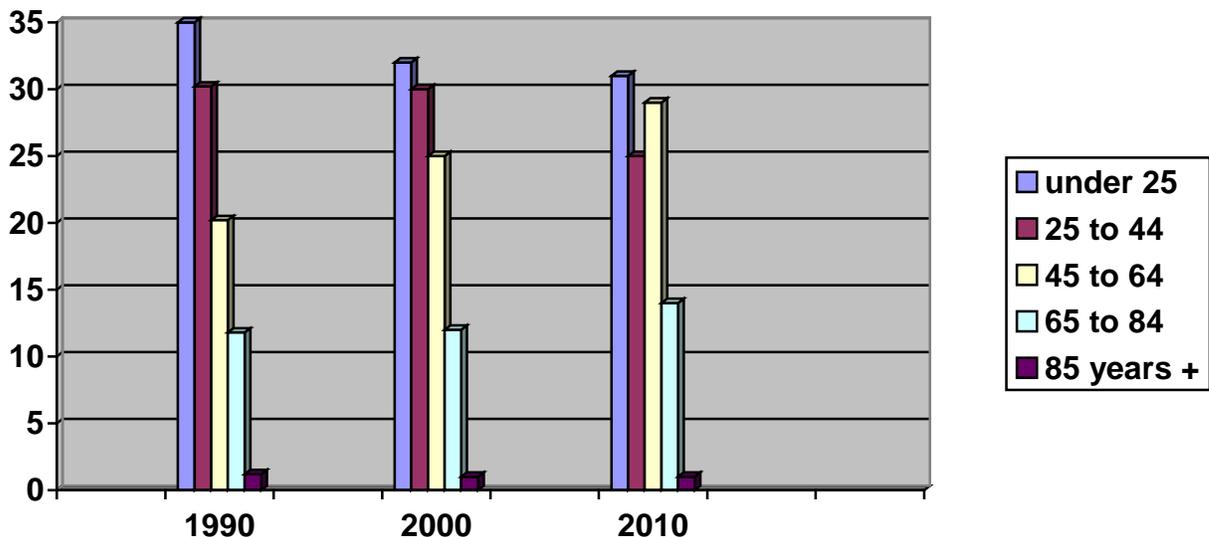
## Item 2 Region Economies

The following table and charts show the per capita incomes for the county and each municipality in 1990, 2000, 2010 and estimates for 2015. The existing trends are expected to continue for each municipality and the county, though increases will likely be smaller in the future for most municipalities.

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 Claiborne County has increased every census year from 29.7 (1980), 34.0 (1990), 37.4 (2000), and 41.1 (2010). 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	2010 Number of People	Percent
Under 25	9,569	36.6	9,689	32.0	9,953	31.0
25 to 44	7,883	30.2	8,570	30.0	7,950	25.0
45 to 64	5,287	20.2	7,591	25.0	9,168	29.0
65 to 84	3,081	11.8	3,574	12.0	4,627	14.0
85 years and older	317	1.2	438	1.0	515	1.0

**Age Distribution**

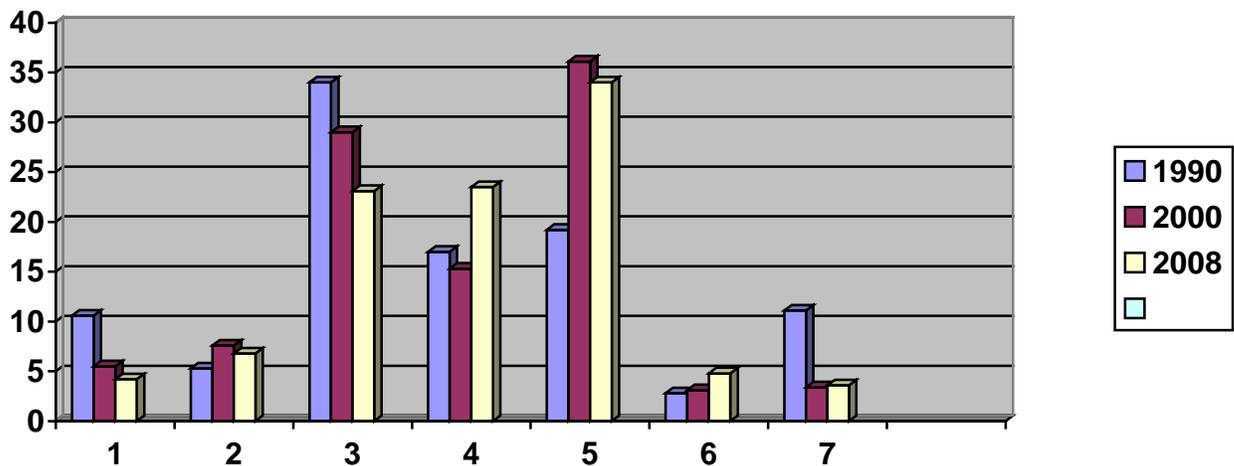


The estimates for the current per capita incomes show that most all entities have experienced an increase in the purchasing power of their residents. Most residents are likely to use this increased purchasing power to spend more monies in the future. This is likely to mean an overall increase in solid waste generated by economic growth. However, this increase in solid waste will be from the consumer industries and not large industries that have the potential to create problem waste. The region of Claiborne has seen its per capita increase 51% in the last twenty years. This increase is compared to the State increase of 48%. One could suggest that the County has been able to attract the higher paying jobs that the rest of the State has seen. Knowledge of the area would suggest that the region has been fortunate to have a few large industries that have been located in Claiborne County for many years that has allowed for employees to receive higher wages due to longevity. The College does help in attracting higher paying jobs in terms of teaching that can skew some of those numbers. For the most part Claiborne County is like most of the rural East Tennessee area that has a few good industrial jobs and the rest of the workforce must leave the area to make a living.

Jurisdiction	1989	1999	2010	2015
Claiborne County	\$8,371	\$13,032	\$17,255	\$21,396
New Tazewell	\$10,421	\$13,619	\$16,025	\$18,426
Tazewell	\$8,372	\$16,688	\$15,961	\$17,500
Harrogate	\$11,166	\$15,585	\$15,980	\$17,750
Cumberland Gap	\$8,330	\$12,005	\$17,436	\$19,500
Tennessee	\$12,255	\$21,587	\$23,418	\$27,165

The following table takes a look at the types of businesses in Claiborne County that can have an effect on the amount of solid waste being generated. The table looks at the percentage of each classified work from 1990, 2000 and 2010. The Census Bureau changed their classification in 1997, so the seven shown are based on a uniform categorization by the author to derive at similar numbers for comparison. As the table below shows, manufacturing, professional services and retail trade continue to be the leading industries in the region. This basically results in less garbage that is produced in terms of large volume. The manufacturing jobs will generally produce a lot of cardboard, paper and glass that can be recycled. Also, the public industry and the professional industry are closely related and that generates a lot of paper and will not put any extra burden on the waste stream in the future. The downturn in the economy has also taken its toll on Claiborne County with jobs percentages decreasing from 2000 to 2008 as shown by the following numbers, 10,158 (1990) to 11,754 (2000) to 12,300 (2010) for Claiborne County.

Industry	1990	2000	2010
1. Agriculture, Forestry, Fisheries, Mining	10.6%	5.5%	4.2%
2. Construction	5.3%	7.6%	6.8%
3. Manufacturing	34.0%	29.0%	23.1%
4. Trade and Finance	17.0%	15.3%	23.5%
5. Professional Services	19.2%	36.1%	34.0%
6. Public Administration	2.8%	3.1%	4.8%
7. Other	11.1%	3.4%	3.6%

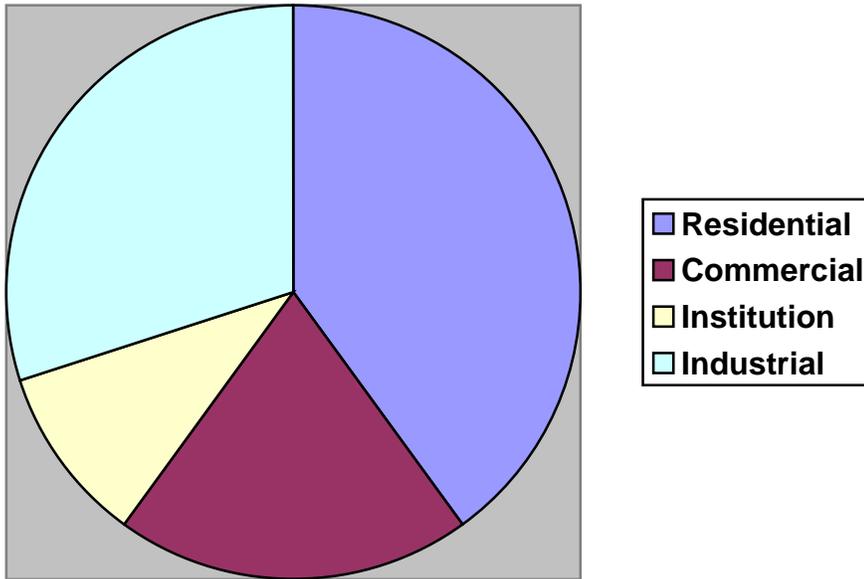


In looking at the job patterns for the region, one can see that there has been more of a shift from the labor intensive jobs to the white collar jobs in the region. Professional Services jobs have seen the largest increase from 1990 to 2010. Manufacturing jobs have leveled off and those kinds of jobs are becoming more warehouse type jobs rather than the sewing operations. The numbers above show that Claiborne is a bedroom community that has the mobility to shop in Knoxville and Morristown, which reflects on the retail trade in the area. Construction numbers have remained steady during the last census but have come to a halt, which emulates the economy where no new houses are being built. The Region of Claiborne County will continue to experience its largest increase in white collar jobs with the employees having a more environmental awareness. This will shift some of the taxes being spent to more environmental programs that will create more opportunities to divert waste from Class I landfills. The next needs assessment should see a slight increase in waste from residents due to population increases and that should not adversely affect the waste stream or cause a financial burden on the region.

### Item # 3 Region Waste Stream

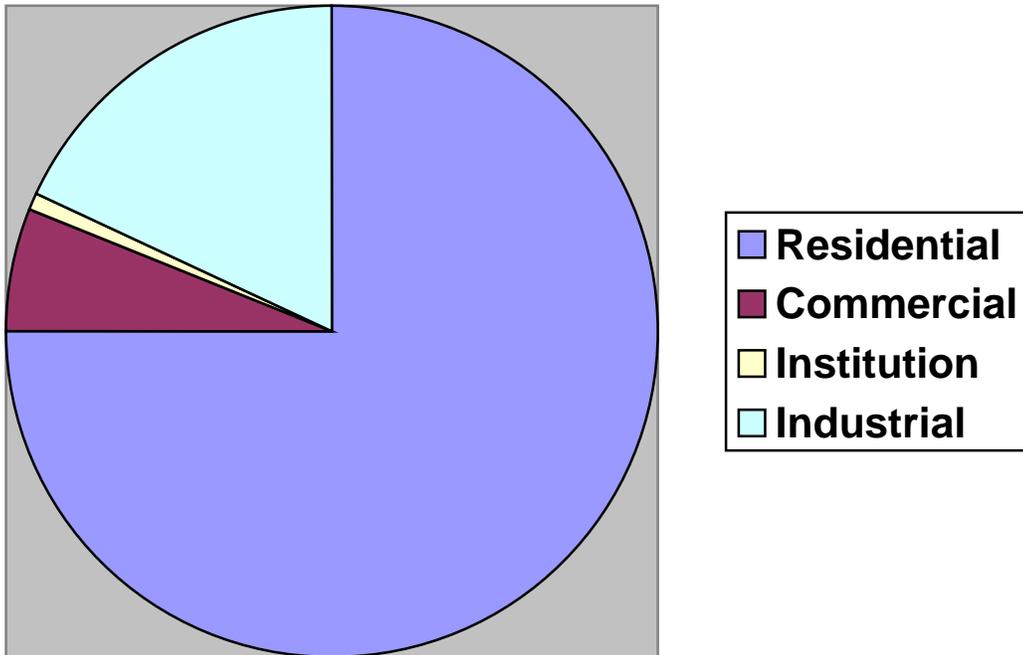
Claiborne County solid waste stream is shown below.

Residential 40%  
Commercial 20%  
Institution 10%  
Industrial 30%



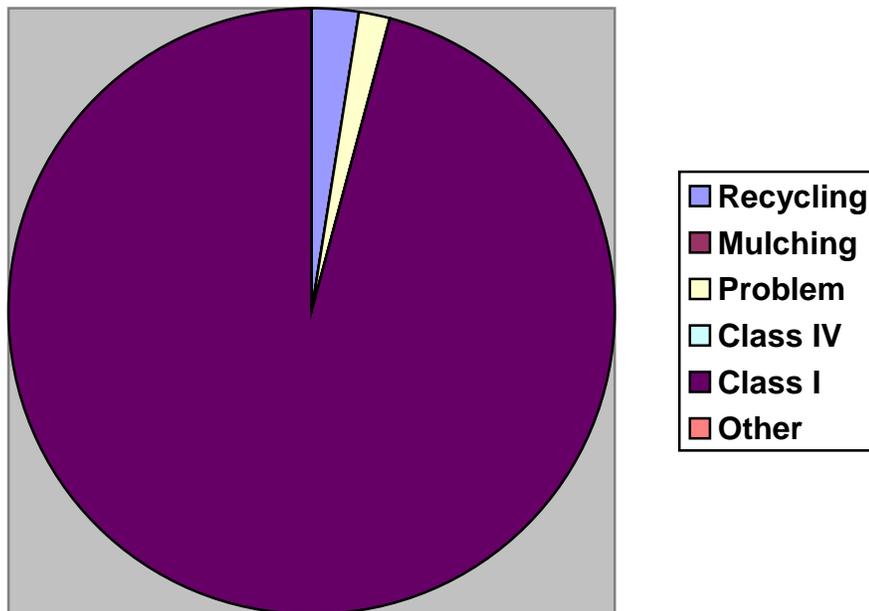
The waste stream during the last needs assessment looked like the following.

Residential 75%  
Commercial 6%  
Institution 1%  
Industrial 18%

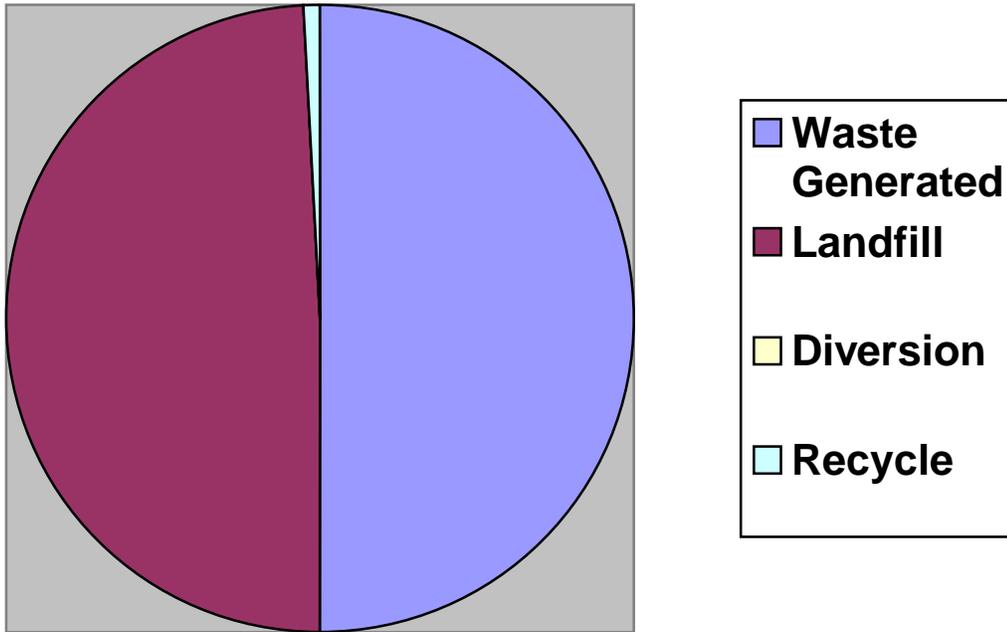


This can be further broken down into the following: This is county report waste only not industrial, commercial.

Recycling – 352 – 2.4%  
Mulching – 0 – .0%  
Problem Waste – 282 – 1.9%  
Class IV Waste – 0 – 0%  
Class I Waste – 14,118 – 95.7%  
Total = 14,752 – 100.0%

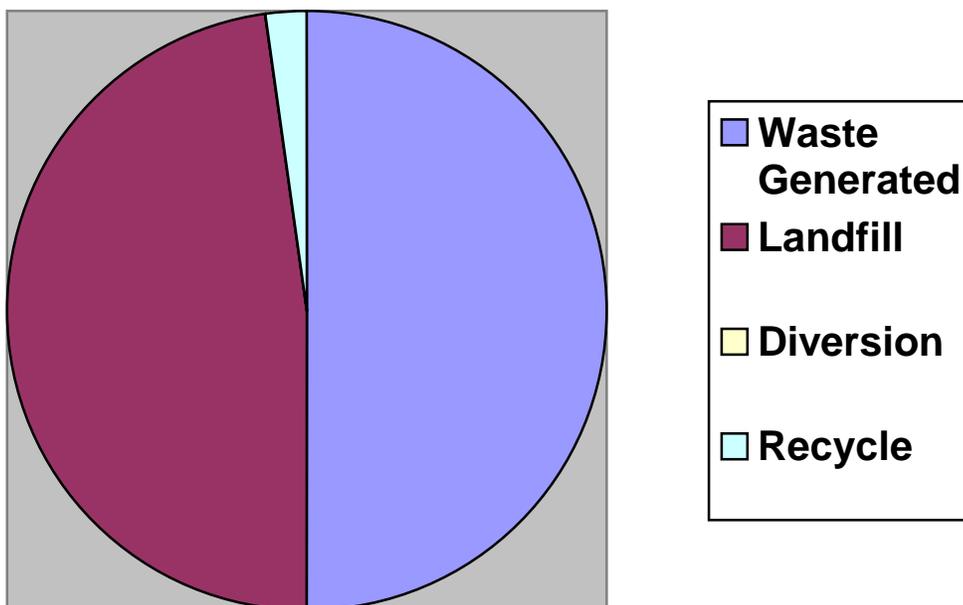


### Waste Stream 2005 Totals



### Waste Stream 2010 Totals

The pie charts above show the percentage of waste that has changed from 2005 report needs assessment update to the current needs assessment. Class I



Landfill waste was shown as 98% in 2005 and is now 86% of the waste. Diversion methods were shown at 0% in 2005 and are now shown as 0% in 2010, but this year new efforts will be in place to divert Class III waste from the Class I landfill. Recycling efforts shown as 2% in 2005 are now shown as 4% in 2010. The chart shows that the generated waste has decreased from 15,315 tons in 2005 to 14,752 tons in 2010. The main reason for this reduction is the recycling efforts that have increased and the slow population growth. The annual reports for Claiborne County provide one of the truer reports in that commercial and very few industrial numbers have not been accounted for in their reports. The 1995 base year rate of 1.2 tons per person is compared to the 2010 report that shows a tonnage per person of .68 tons per person. This shows that the region has continued to provide alternative recycling opportunities from the traditional cardboard and paper recycling. The region has expanded their recycling to include plastic, electronic goods, metals and has started programs in the schools. This year the region will begin a mulching program that will also assist in keeping waste out of the Class I landfills or will help to keep from polluting the air through burning. The State average is .90 tons per person.

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

**Class I waste** is being handled through a network of convenience centers that are serviced by the County. A total of eight (8) convenience centers are scattered throughout the county and one (1) recycling center that is also a drop off site for Class I Waste. All of the convenience centers are manned with county employees and the containers are owned by the county. The Class I waste from the convenience centers is collected using 6 cu. yd containers and a front end loader refuse truck and taken to the transfer station at the old landfill site in Claiborne County by way of a contract with Volunteer Waste in Scott County. The region of Claiborne does not collect waste for the commercial or industrial establishments. These entities must arrange for their own collection. The city of Harrogate does not provide any collection of solid waste and their residents must utilize the convenience center in the area. The cities of New Tazewell and Tazewell provide the collection of Class I waste house to house curbside by way of a contract with Waste-A-Way, a small local company. The waste is taken to the Claiborne County landfill transfer station to be hauled to the Scott County landfill. The residents are picked up once a week. Commercial and Industrial entities must contract out their waste disposal on their own. The Town of Cumberland Gap collects their waste once a week utilizing their own personnel. A two man crew using a rear loader picks up the waste and takes it to Bell County landfill in Kentucky. The landfills that the regions utilize have life expectancy of over 10 years that will last as long as the contracts that each entity has signed off on. The tipping fee is currently \$40 a ton.

**C&D waste or Class IV waste** is collected at the Claiborne County landfill, but currently is taken to a Class I landfill for disposal. The waste is placed into the trucks at the transfer station and taken to the landfill by way of a contract to Scott County. No Class IV waste is collected at the convenience centers. None of the cities within the County of Claiborne collect class IV waste. It is the responsibility of the contractor or the homeowner to dispose of the waste.

**Waste Tires** are collected at the Claiborne County landfill by way of a contract with Liberty Tires. Trailers are provided at the landfill site, where residents can un-load their tires into the trailer. No tires are collected at the convenience centers. None of the cities pick up tires for their citizens. A total of one hundred ninety seven (197) tons of tires were collected and diverted from the Class I landfill in 2010.

**Used Oil** is collected at seven of the eight convenience centers; the eighth convenience center in Clairfield has just received grants funds that will allow for collection to take place in the near future. The recycling center also has a drop off site. The used oil that is collected at the convenience centers is pumped by Enterprise oil when the tanks are full and taken to Knoxville. None of the cities currently have used oil collection sites for the community to utilize. A total of twenty-one (21) tons of used oil was collected in 2010.

**E-Waste** is collected at all of the convenience centers and the waste is taken back to the Claiborne County landfill by county employees. The waste is then placed into Gaylord Boxes for future transportation by a company called 5 R Processing. The city of Tazewell will collect e-waste during semi-annual clean up days that are held within the city limits. This waste is then transported to the Claiborne County landfill for disposal by city employees. None of the other cities provide for the collection of e-waste. A total of forty-nine (49) tons of electronic waste was collected in 2010.

**White Goods / Metals** are collected at three (3) the convenience centers in the County and our hauled to the landfill by county employees utilizing roll off containers and truck. The metals are placed in a designated place and our collected by PC metals for disposal. The city of Tazewell will collect metals/white goods during their semi-annual clean up days from the residents. The city of New Tazewell will collect metals from residents and take the metals to the local recycling company in town called Dave's Recycling. The cities of Cumberland Gap and Harrogate do not provide any collection for their residents. A total of seventy (70) tons was collected at the Claiborne County landfill site and two hundred thirty four (234) tons was collected in the region by Dave's Recycling.

**Brush / Compost materials** are collected at the landfill site. The brush and leaves that are collected at the landfill site our currently being taken to a class I landfill site utilizing the transfer station at the landfill site. No brush or compost material is collected at any of the convenience center sites. The city of Tazewell provides for the collection of brush twice a month utilizing a two man crew and a ton truck. Most of their brush is hauled loose and taken to a local furniture mfg.

for disposal. They do have a chipper, but due to age is not used very much. The leaves are collected once during the fall and the residents must have the leaves in bags and they are placed in a ton truck by city employees and taken to the Claiborne County landfill for disposal. The city of New Tazewell collects brush utilizing a three man crew with a 11/2 ton truck that is enclosed with a brush chipper. Most of the chips are disposed of at the site and the rest is taken to the county garage site for mulching purposes and given to residents for free. Leaves are collected loose utilizing a leaf vacuum and the material is placed into a truck and taken to the county garage for mulching purposes. The town of Cumberland Gap collects brush twice a month from the residents utilizing a ton truck and a two man crew. The brush is collected loose and taken back to their public works compound. Most of the brush is burned and a small amount is chipped with their old chipper. Leaves are picked up during the fall and the residents must bag the leaves and they are taken to the landfill. The city of Harrogate picks up small amounts of brush and leaves to assist the elderly or handicap and they are taken to a designated spot for disposal. No mulch totals were reported in 2010.

**Sewer sludge** that is being produced by the utilities in the region is being farmland applied and is diverted from the Class I landfill. A total of 178 tons was diverted in 2010. The sewer goes through the process at the wastewater plant and then goes through a press to dewater the sludge, which is then placed on the drying beds. When the sludge is dried it is placed in a ton truck and taken to a State approved site for fertilizing application.

**Paint** is collected at the landfill site and the latex paint is mixed with chips and placed in a dumpster and when it's dry it is taken to the transfer station for disposal in a Class I landfill. The oil base paint that is collected is saved and the State picks it up during one of the HHW events. The Cities in the region do not provide any paint collection. A total of eleven (11) tons of latex paint was collected and taken to a class I landfill site in 2010.

**Paper** is collected at each convenience center utilizing roll-off containers. The containers when full are transported back to the recycling center for processing. The paper is baled and stored until a market call is made to Rock Tenn in Knoxville for collection. The County also collects paper in the two largest high schools in the region, Cumberland Gap and Claiborne County by way of a single stream collection using roll-off containers. These containers are taken to Rock Ten in Knoxville, Tennessee. None of the cities collect paper at the present time. The city of Harrogate had stated that there was a small collection of paper at LMU college campus that was handled by students and that the garden club had handled newspaper in the past. A total of eighty two (82) tons of paper was collected and properly disposed of in 2010 by the region.

**Cardboard** is collected at two of the convenience centers that utilize compactors to handle the cardboard. The cardboard is then transported to the recycling center at the landfill site and baled and placed into storage. The cardboard currently goes to an end user in Virginia. Residents are also allowed to bring cardboard to the landfill for disposal. The city of New Tazewell does not provide

for the collection of cardboard, but stated that Hilltop Recycling does set out containers for commercial and industrial establishments in the city for collection. Hilltop also provides this for the city of Tazewell. None of the cities collect cardboard for their residents. A total of one hundred seventy nine (179) tons of cardboard was collected and properly disposed of in 2010 by the region.

**Plastic** is collected at two of the convenience centers that utilize compactors to handle the plastic. The plastic is then transported to the recycling center at the landfill site and baled and placed into storage. The plastic is currently going to Rock-Tenn of Knoxville. None of the cities provide for the collection of plastic. A total of nineteen (19) tons of plastic was recycled in 2010.

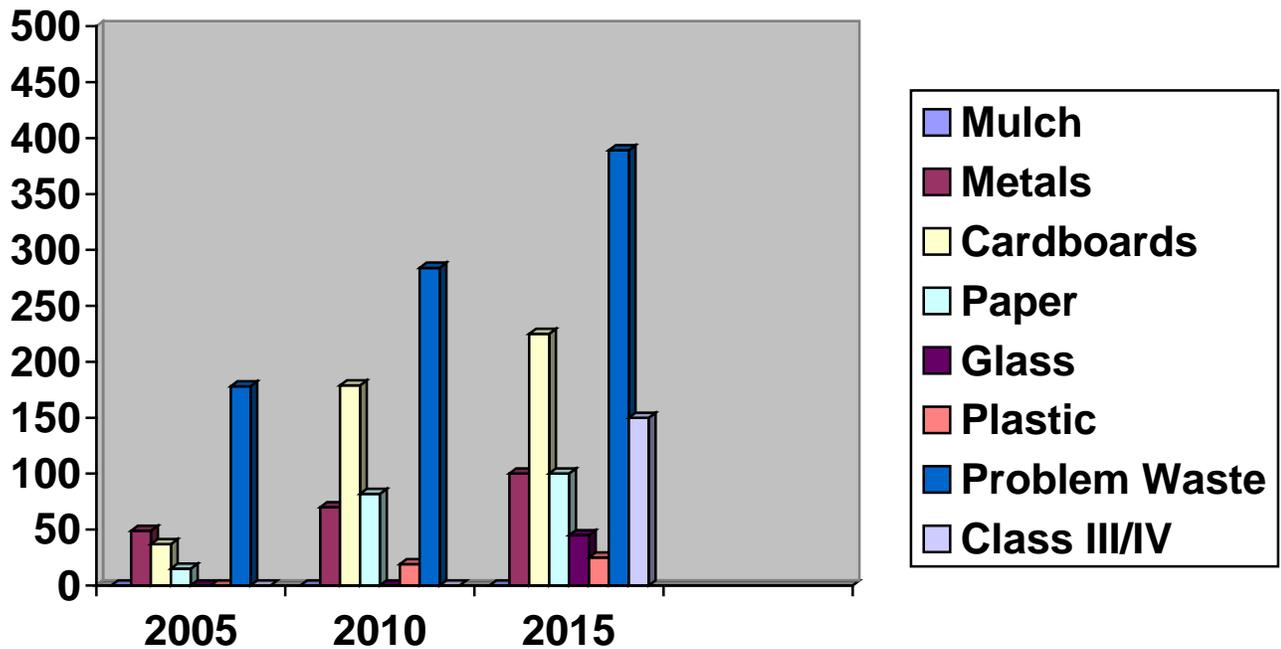
**Glass** is not collected at the convenience centers and none of the cities collect glass.

The above information represents a good analogy of the public sector and how it takes care of its waste. Below is a table showing an analysis for two known amount periods and one estimated period that will be the next needs assessment. The numbers below only represent the public entities.

Material	Material – 2005	Material –2010	Material –2015
Sanitation - Land filled	15,035	14,118	13,271
Metals / White Goods	49	70	100
Cardboard	37	179	225
Paper	15	82	100
Glass	0	0	45
Plastic	0	19	25
Problem Waste – tires, batteries, automotive fluid, e-waste, paint.	178	284	389
Sewer Sludge	0	178	225
Mulch	0	0	0
Class III/IV	0	0	150
Total Generated	15,314	14,930	14,530

The 2015 number is a simple guess with very little data to go on. This will also affect the Total Generated for 2015. The Class I disposal should continue to show reduction with an amount of 14,530 tons per year. The other numbers will provide a good analysis on what is currently happening in the region and what can be expected.

The region has done a good job to make residents more aware of the need to divert as much waste from the landfill as possible. Below are the numbers for materials that are not being landfill in a Class I.



#### **Item # 4: Waste Collection System and Life Cycle**

The Region of Claiborne County utilizes eight (8) convenience centers and the recycling center to collect Class I waste for Claiborne County. The cities of New Tazewell and Tazewell contract out the collection and hauling of their waste. The Town of Cumberland Gap utilizes their own vehicles, equipment and manpower. The residents pay a monthly fee to have the curbside service. Waste in the region is either taken to a landfill in Scott County or one in Bell County, Kentucky. All of the landfills mentioned have enough landfill space to cover the next needs assessment time period from 2011 to 2016.

Class IV waste can be taken by residents to the landfill site and is placed into the roll off trucks to be hauled to the Class I landfill in Scott County. None of the cities pick up Class IV waste. The convenience centers do not accept Class IV waste.

Brush and leaves are collected at the landfill site and put into the trailers that haul the waste to the Class I landfill in Scott County. The City of New Tazewell collects brush and leaves and takes it to the County garage and the material is given to the public for free. They sometimes chip the brush on site. The City of Tazewell collects leaves and takes to the landfill and brush and takes to a local industry. The Town of Cumberland Gap burns brush and takes leaves to the landfill. The City of Harrogate collects small amounts of brush and leaves and dumps them at a public site for cover. The mulch is then used by the County and its residents.

Tires are collected at the landfill where residents can place the tires into trailers that are provided by Liberty Tires. The trailers when full are taken by Liberty Tires to an end user. Tires are not collected at the convenience centers and none of the cities collect tires except for small amounts.

Metals are collected at three of the convenience centers and the landfill site. Metals are collected by private hauler to the market place. The Cities also collect metals from their residents and take them to either the landfill or Dave's Recycling.

Recyclable items that include plastic, cardboard, news print and mixed paper are collected at some of the convenience centers in the Claiborne County region. All of the items are collected by County employees and hauled back to the recycling center for processing. The items are baled and then picked up by Rock-Tenn in Knoxville and then taking to a paper mill. None of the cities provide any collection of recyclable items. The county also provides for single stream collection of recyclable items paper and plastic and two of the schools in the region and takes those directly to the market place without baling.

Used oil is collected at most of the convenience centers in the region and the used oil tanks are emptied by private hauler and taken back to the market place. None of the cities provide for this service.

E-Waste is collected at all of the convenience centers and the recycling center. The waste is picked up by a private company. None of the cities provide for the collection of e-waste. The city of Tazewell does have two clean up days a year where some e-waste is collected and taken to the landfill.

Paint is only collected at the landfill site. The water base paint is dried and placed into the transfer station trailer for haul to a class I landfill. The oil base paint is stored until a State HHW event can be held. None of the cities provide for the collection of paint.

Sewer sludge is being recycled at the utility by drying the sludge then taken it to State approved farm land for disposal.

## Section 5 – Roane County Reduction Rate

Current Year Generation	Current Year Disposal	Base Year Disposal	Current Year Population	% Reduction compared to Base Year	Real Time Comparison
23,477	14,119	24,033	32,213	48%	40%

The region of Claiborne County currently meets the 25% waste reduction goal in 2010 as shown in the table above. Below is an illustration on what items are needed or in the process of starting that will help the Region to continue meeting the goal in the future. Initial review of last year's annual report showed that very little industrial and no commercial establishments were reported. Grocery stores would probably create another 400 tons of recyclables that are collected in the region. Utility numbers would create another 178 tons and the cities numbers could create another 125 tons in mulching numbers. We need to see if we can receive these numbers in the future. Since the original solid waste plan was implemented, the region of Claiborne County has been very active in the pursuit of providing recycling opportunities for their citizens. The region has added such items as computers/electronics, used oil, plastic and paint collection. These items are in addition to the cardboard and mixed papers that are available in the region.

**Class I waste** in the region of Claiborne County will continue to be exported out of the region during the next needs assessment. The landfills being used by the County has enough permitted landfill space to operate for another 20+ years. The entire process seems to be running quite efficient and no major changes are needed in the foreseeable future. The convenience centers seem to be well equipped to handle the collection of Class I waste. Economic reasons may require the region to close some of their convenience centers during the next needs assessment. Both New Tazewell and Tazewell will continue to contract out their waste and the Town of Cumberland Gap will continue to provide its own collection of Class I waste. The City of Harrogate due to its size should have to begin some type of collection in the future. This will be a demands issue by their residents.

**Class IV waste** in the region of Claiborne County is practically non-existent due to any waste that is collected at the recycling center is currently being directed to a class I landfill for disposal. If meeting the 25% waste reduction rate becomes a problem in the future, the region might want to haul the Class IV waste to a Class IV landfill for reporting purposes. Such a move may result in an additional 1,500 tons of Class IV waste that is collected in the region. There is no reason for the region to change how they handle Class IV waste at the present time.

**Waste tires** are being handled efficiently by the region. No changes in the process are needed for the region. It was noted that the region would like to have better options on how to handle the tires, but currently none of those are available.

**Used oil** drop-offs have been made accessible to most residents in the region by way of the convenience centers. The county will begin utilizing a burner to heat their recycling center in the future that will make use of their used oil being collected in the region. Other cities may follow in pursuit of saving money in terms of heating buildings in the future. The used oil program seems to be running efficiently in the region.

**E-waste** is one of the new areas of recycling that is provided by the Region. The convenience centers provide access to all residents in the region and the landfill site is large enough to provide for expansion in the future if needed. The County has a very good program with the collection of e-waste and the cities provide small collections that help the region. No changes are needed at the present time.

**Metals** are being collected at the convenience centers and the program is run quite efficiently. Some of the cities collect metal, but none have used this as a revenue source. This is one area that we need to look at in the future is how to make money off the metals. Other entities in other parts of East Tennessee have been able to receive monies. No changes are needed at the present time.

**Brush / Compost** materials in the County that are now being collected are going to a Class I landfill. In the near future that will change and brush and leaves will be collected at a Class III transfer station located at the landfill site. This will provide for good diversion of waste from the Class I landfill site and will save the region monies in terms of tipping fees. Would it be easier for most residents to take their brush/leaves to the convenience centers? The answer is yes, but that is not fiscally prudent to offer such services. The landfill operation is being operated in an efficient manner and all of the cities provide for the collection and disposal of this material. The region needs to get a better count on what the cities do so that can be placed in the annual reports in the future that will help in waste reduction numbers.

**Paint** is an area that could be improved upon in the future. Some other regions have been able to collect the paint and mix paints and allow for the paint to be reused. This is something that will need to be examined in the future and the region would be helped by having the State providing monies for a paint processing center. One would also have to look at the labor force to see if most of the work could be done with volunteer or inmate labor. This can be labor intensive and the county is not in position to hire additional people. The region currently properly disposed of the paint that is collected and the program seems to be working efficiently. No changes are needed at the present time.

**Sewer sludge** is being farm land applied that diverts this waste from the class I landfill. This saves the utility at least over \$5,000 a year in tipping fees.

**Paper** is collected at each convenience center in the region. None of the cities provide such collection. The county provides a recycling center that allows for the processing of the material. The county has started a program at the schools for the collection of paper and has an opportunity in the future to increase that program from 2 schools to 11 schools. All of the government buildings needs to provide for the collection of paper and that is a program that needs to be looked at in the future. The cities of Tazewell and New Tazewell have the best opportunity to provide some house to house collection of recyclables in the future, since they are contracting out their service. Their contracts will be up during the next needs assessment and that could be one area that they look at in renewing their contracts to a provider that will also collect recyclables. This will be an area that the cities will need to look at in terms of savings from reduced Class I landfill fees in the future. The County has the ability to process the material that is collected and knows the market in order to move the product. The collection of such material house to house will never be great money revenue, but it could save money on the tipping fee charges. In order to make the program more acceptable for the cities, the collection of the recyclable items needs to be single-stream. This would make it easier for city employees to collect and make it easier for residents to store. The County has the equipment to handle the dumping of paper into a hopper that would disperse the material onto a conveyor belt that will take the material from point A to point B for baling. The county also has the potential for growth into the governmental offices for the collection of paper and the collection of paper at the schools. The problem right now is the ability to find funding to provide containers to be placed into these entities.

The region may want to look at what the Cocke County region has done in terms of recycling at the schools in the future. The Cocke County region has tied the recycling at the schools to an incentive program, whereby the schools can receive monies that can be used for the classrooms. The region could possibly contract this out with a company like Goodwill Industries to handle that waste.

**Cardboard** collection is an area that the county needs to improve on due to the money that can be generated by the sale of cardboard. The schools and government office would be a good source of cardboard, but containers will be needed to handle that process. Until the regions leaders look at such collections as ways to not only generate some monies by the sale of the material, but also as a way to save monies in tipping fee charges these program will have to grow in small stages. The cities by providing single stream collection house to house of recyclables would also provide a good amount of cardboard.

**Plastic** is collected at a couple of the convenience centers in the same manner as cardboard and paper. The same potential growth that was outlined above would apply to plastic. Plastic is quite bulky and the region needs help in funding to provide a better method of handling plastic. The region probably needs to go

ahead and identify a more efficient method in order to better prepare for future changes in the handling of plastic. None of the cities provide for the collection of plastic.

The problem is that plastic takes up a lot of space in a container and has to be dumped more frequently. Until plastic becomes a high dollar commodity for recycling, very little else can and should be done in the region.

**Glass** is not collected at the convenience centers and is not collected in the region. The problem is that the region does not have a good end user to make collecting glass a viable commodity. Other regions have looked at using glass as a component of road resurfacing, but that has not taken hold at the present time. The collection of glass by the region could easily net 125 tons a year in waste diversion that would save monies in tipping fees. The landfill site seems to have enough room to provide for the collection of glass to hold the glass until enough warranted the collection by an end user. One needs to do a study to see how much it would cost to provide the collection and how much it would save in tipping fee charges.

The region of Claiborne County has made great strides in providing new services to its residents in terms of recycling. The region of Claiborne County needs to find ways to get the cities more involved in the future.

**Item # 6: 10-Year Regional Disposal Assurance in Claiborne County Region.**

Site Name	Annual Tons Disposed by Claiborne County	SNL Permit #	Current Landfill Capacity (daily throughput)	Maximum capacity	Projected Life of Facility
Volunteer Landfill	14,118	SNL-76-0271	1,000 per day	Depends on compaction rate and Landfill Design and Operations Plan	21 years left

Public and Private Collection Service in the Claiborne County Region (class I waste)

Service Provider	Service Area	Frequency of Service	Estimated average annual tons collected	Type of Service
Claiborne County	County Wide	Five days a week	10,458	Convenience Centers
City of New Tazewell	City Limits	Once a Week	1,521	Door to Door Collection
City of Tazewell	City Limits	Once a Week	1,147	Door to Door Collection
City of Harrogate	City Limits	Five days a week	1,518	Convenience Centers
Town of Cumberland Gap	City Limits	Once a week	108	Door to Door Collection

\*\* Estimated tonnage is based on .53 tons per person time's population of entity.

All commercial and industrial establishments contract out the collection of their waste with private haulers.

Public and Private Collection Service in the Claiborne County Region (Recycling)

Service Provider	Service Area	Frequency of Service	Estimated average annual tons collected	Type of Service
Claiborne County	County Wide	Five Days a Week	634	Convenience Centers ( recycling drop off sites)
City of New Tazewell	City Limits	Twice a month for brush and once during fall for leaves	110	Small pickup of white goods; brush and leaf program.
City of Tazewell	City Limits	Twice a month for brush and once during fall for leaves	110	Small pickup of white goods; brush and leaf program.
City of Harrogate	County Wide	No Service	0	No program
Town of Cumberland Gap	City Limits	Twice a month for brush and once during fall for leaves	110	Brush and leaf program.

Claiborne County has eight registered convenience centers that are scattered throughout the region. All of the convenience centers operate as recycling drop off sites. The larger sites handle mixed paper, cardboard, plastic, scrap metal, used oil and aluminum cans. The operating hours are 9:00 a.m. – 5:00 p.m.; M, T, R, F and Saturday.

Industries and Commercial establishments coordinate their own recycling efforts.

## Item # 7: Solid Waste Management Infrastructure

Claiborne County

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$587,358.00	\$0.00	\$587,358.00
Transportation/hauling	\$561,343.00	\$0.00	\$561,343.00
Collection and Disposal Systems			
Equipment	\$0.00	\$160,000.00	\$160,000.00
Sites			
Transfer Station	\$0	\$0	\$0
Convenience Center	\$0.00.00	\$0.00	\$0.00
Recycling Center	\$0.00	\$155,000.00	\$155,000.00
MRF	\$0	\$0	\$0
Landfills	\$343,679.00	\$0	\$343,679.00
Site	\$0	\$125,000.00	\$125,000.00
Operation	\$0.00	\$0	\$0.00
Closure	\$0	\$0	\$0
Post Closure Care	\$0.00	\$0	\$0.00
Administration (supplies, communication cost, etc.)		\$0	
Education	\$12,234.00	\$0	\$12,234.00
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$0
<b>Total</b>	<b>\$1,504,614.00</b>	<b>\$440,000.00</b>	<b>\$1,944,614.00</b>
Revenue			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$300,000.00	\$0	\$300,000.00
Property taxes	\$946,461.00	\$0	\$946,461.00
Sales tax	\$62,050.00.00	\$0	\$62,050.00
Surcharges	\$36,666.00	\$0	\$36,666.00
Disposal fees	\$0.00	\$0	\$0.00
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$0	\$0	\$0
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0.00.00	\$0	\$0.00.00
Sale of Recyclables & Commodity Rebates	\$10,000.00	\$0	\$10,000.00
Other sources: (Grants, bonds, interest, sales, etc.)	\$11,000.00	\$440,000.00	\$451,000.00
<b>Total</b>	<b>\$1,366,177.00</b>	<b>\$440,000.00</b>	<b>\$1,806,177.00</b>

The region of Claiborne needs is for the following: 1. Excavator = \$70,000; 2. Improvements to scale house and new scales = \$125,000; 3. Skid Steer Loader = \$30,000; 4. Recycling Containers at schools = \$55,000

City of New Tazewell

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$0.00	\$0	\$0.00
Transportation/hauling		\$0	
Collection and Disposal Systems	\$90,150.00	\$0	\$90,150.00
Equipment	\$0	\$30,000.00	\$30,000.00
Sites	\$0	\$0	\$0
Convenience Center	\$0	\$0	\$0
Transfer Station	\$0	\$0	\$0
Recycling Drop Off Center	\$0	\$0	\$0
MRF	\$0	\$0	\$0
Landfills	\$0.00	\$0	\$0.00
Site	\$0	\$0	\$0
Operation	\$0	\$0	\$0
Closure – See total under post closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$0
Administration (supplies, communication cost, etc.)	\$0	\$0	\$0
Education	\$0	\$0	\$0
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$0
<b>Total</b>	<b>\$90,150.00</b>	<b>\$30,000.00</b>	<b>\$120,150.00</b>
Revenue\$			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$90,150.00	\$0	\$90,150.00
Sales tax	\$0	\$0	\$0
Surcharges	\$0	\$0	\$0
Disposal fees	\$0	\$0	\$0
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$0.00	\$0	\$0.00
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0	\$0	\$0
Sale of Methane Gas	\$0	\$0	\$0
Other sources: (Grants, bonds, interest, sales, etc.)	\$0	\$30,000.00	\$
<b>Total</b>	<b>\$90,150.00</b>	<b>\$30,000.00</b>	<b>\$120,150.00</b>

The city of New Tazewell requested a need for a new leaf vacuum- \$20,000 and recycling containers - \$10,000 to start a door to door collection.

City of Tazewell

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$0	\$0	\$0
Transportation/hauling	\$0	\$0	\$0
Collection and Disposal Systems	\$73,077.00	\$0.00	\$73,077.00
Equipment	\$0	\$35,000.00	\$35,000.00
Sites	\$0	\$0	\$0
Convenience Center	\$0	\$0	\$0
Transfer Station	\$0	\$0	\$0
Recycling Center	\$0	\$0	\$0
MRF	\$0	\$0	\$0
Landfills	\$0	\$0	\$0
Site	\$0	\$0	\$0
Operation	\$0	\$0	\$0
Closure – See total under post closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$0
Administration (supplies, communication cost, etc.)	\$0	\$0	\$0
Education	\$0	\$0	\$0
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$0
Total	\$73,077.00	\$35,000.00	\$108,077.00
Revenue			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$73,077.00	\$0	\$73,077.00
Sales tax	\$0	\$0	\$0
Surcharges	\$0	\$0	\$0
Disposal fees	\$0	\$0	\$0
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$0.00	\$0	\$0.00
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0	\$0	\$0
Sale of Methane Gas	\$0	\$0	\$0
Other sources: (Grants, bonds, interest, sales, etc.)	\$0	\$35,000.00	\$35,000.00
Total	\$73,077.00	\$35,000.00	\$108,077.00

The City of Tazewell requested a new brush chipper - \$35,000.

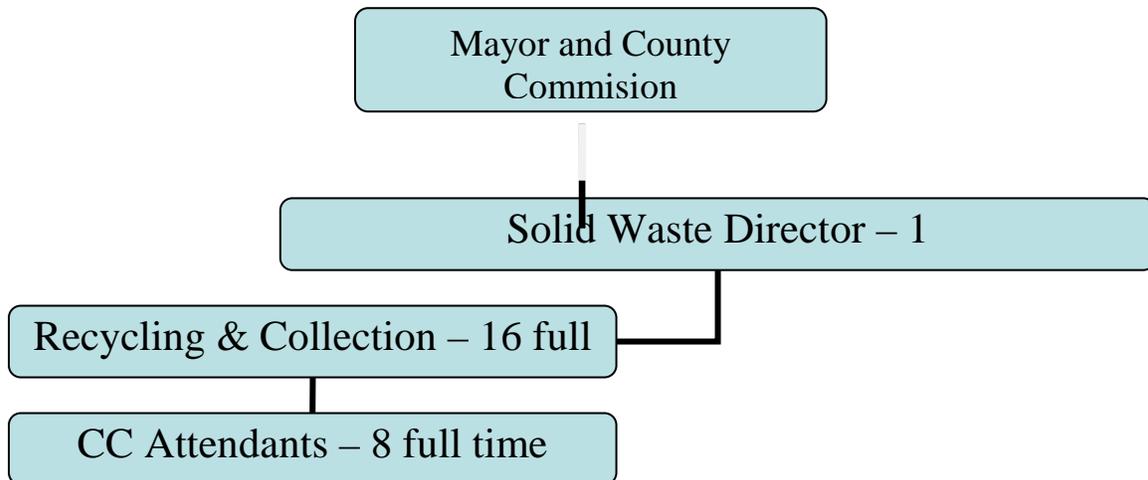
Town of Cumberland Gap

Expenditures			
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$0	\$0	\$0
Transportation/hauling	\$0	\$0	\$0
Collection and Disposal Systems	\$10,477.43	\$0.00	\$10,477.43
Equipment	\$0	\$0	\$0
Sites	\$0	\$0	\$0
Convenience Center	\$0	\$0	\$0
Transfer Station	\$0	\$0	\$0
Recycling Center	\$0	\$0	\$0
MRF	\$0	\$0	\$0
Landfills	\$0	\$0	\$0
Site	\$0	\$0	\$0
Operation	\$0	\$0	\$0
Closure – See total under post closure	\$0	\$0	\$0
Post Closure Care	\$0	\$0	\$0
Administration (supplies, communication cost, etc.)	\$0	\$0	\$0
Education	\$0	\$0	\$0
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$0
Total	\$10,477.43	\$0.00	\$10,477.43
Revenue			
Host agreement fee	\$0	\$0	\$0
Tipping fees	\$0	\$0	\$0
Property taxes	\$0.00	\$0	\$0.00
Sales tax	\$1,537.43	\$0	\$1,537.43
Surcharges	\$0	\$0	\$0
Disposal fees	\$0	\$0	\$0
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$0
Residential charges	\$8,940.00	\$0	\$8,940.00
Convenience Centers charges	\$0	\$0	\$0
Transfer Station charges	\$0	\$0	\$0
Sale of Methane Gas	\$0	\$0	\$0
Other sources: (Grants, bonds, interest, sales, etc.)	\$0	\$0	\$0
Total	\$10,477.43	\$0	\$10,477.43

No equipment is requested by Cumberland Gap.

## Item # 8: Solid Waste Department Organization and Location

Claiborne County

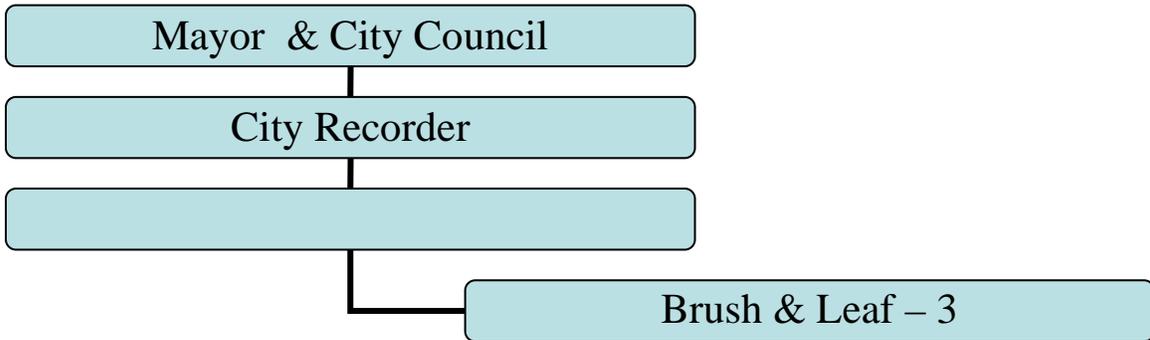


Claiborne County has eight convenience centers with the following locations:

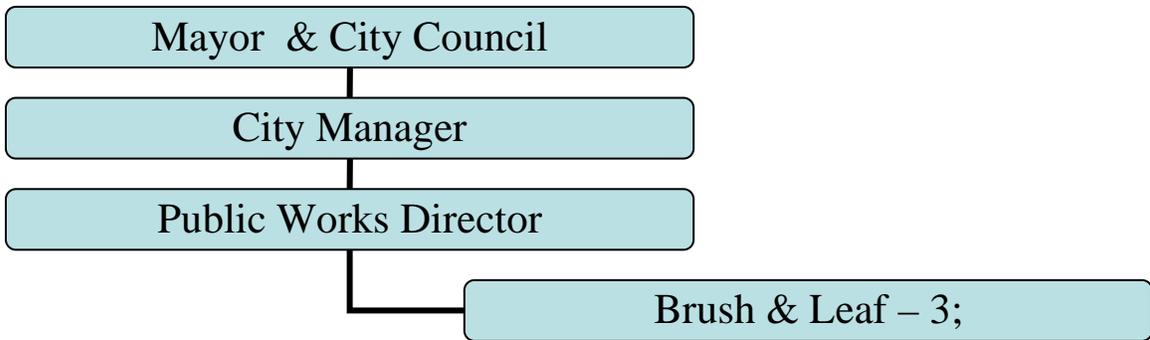
1. Cedar Ford Road CC – Cedar Fork Road, Tazewell, 37879
2. Clairfield CC – Hwy 90, Clairfield, 37715
3. Highway 33 CC – 1959 Hwy 33 S., New Tazewell, 37825
4. Shawnee CC – 840 Bristol Road, Shawnee, 37752
5. Speedwell CC – 4421 Back Valley Road, Speedwell, 37870
6. Springdale CC – 1949 Hwy 25E, Tazewell, 37879
7. Sunnyside CC – Hwy 63, Cumberland Gap, 37724
8. Tazewell CC – 106 Blue Top Road, Tazewell, 37879

Claiborne County has a recycling center that is located at 501 Poore Road, New Tazewell, TN. 37825

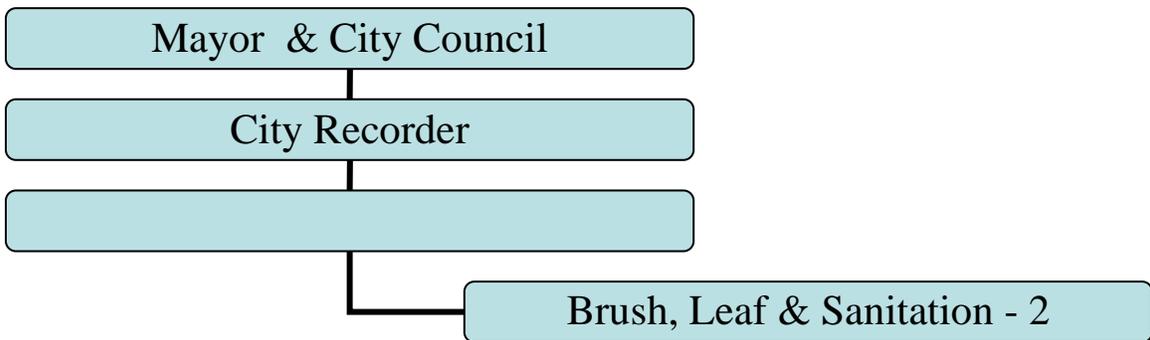
City of New Tazewell



City of Tazewell



Town of Cumberland Gap



## Item # 9: Future Waste Management Needs

### Claiborne County Region

#### Collection

Equipment	Operational Use	Estimated Cost	Potential Revenue Source	Entity
Leaf Vacuum Truck	Leaves	\$20,000	Grants	New Tazewell
Brush Chipper	Brush	\$35,000	Grant	Tazewell
Recycling Containers	Door to door collection	\$10,000	Grant	New Tazewell
Excavator	Recycling Center	\$70,000	Grant	Claiborne County
Skid Steer Loader	Recycling Center	\$30,000	Grant	Claiborne County
Roll-Off Containers	School Recycling	\$55,000	Grant	Claiborne County

#### Disposal

Equipment	Operational Use	Estimated Cost	Potential Revenue Source	Entity
Improvements to Scale House	Landfill	\$125,000	Grant	Claiborne County

The region of Claiborne County has equipment needs as shown above that will take time to purchase on their own. The region has some areas that can be improved upon, if money was available. The region has identified the need for a other waste reduction efforts, but it will require up front monies from the County that will be paid back by savings in tipping fees. The region has also realized that the only way they can increase their recycling efforts is for the cities to begin door to door collection. In order for the program to be cost efficient for the cities, the region would need to allow for single-stream collection. This is basically in place, but a sorting line would have to be developed to take single stream recycling.

## **Item # 10: Residents Attitude and Participation**

No formalized surveys have been done to measure the public's attitude of Claiborne County residents concerning support for environmental programs. The mindset of the people is changing as the population gets older as illustrated by the decrease in the tons per person in the region. Most residents that were casually asked about recycling agree that it is a good way to help 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. Most feel that stringent regulations should not be passed that force residents to recycle. As the school age children become older and they are used to recycling items at school, a habit of recycling will dictate the increase in public participation in the future. That is why it is important to start a recycling program in the schools. A statement from the solid waste director best sums up the need for school participation. I think the biggest needs for Claiborne County is help in funding for the eleven county schools that are doing little or no recycling. I go to several schools every year from K to high school to teach the kids the importance of recycling and how they can help save the environment. The children of all ages are very interested but have very limited means to contribute when their schools are doing nothing. After all these kids are the future of our county and country and would probably even have an influence on the parent to take more part in recycling. The cost for this project in our county is too much of a burden for the tax payers, and private company like Goodwill will only provide service for a few of our schools because the schools are spread out in rural Claiborne County. The county commission is very supportive of this project and would be more than glad to fund most of it with a good plan and some help along the way with state grants or some other means of funding. Teaching kids the importance of recycling is futile unless we have means to let them practice what is being taught. The region of Claiborne County has the resources available to grow with the public in terms of recycling.

## **Item # 11: Regional Solid Waste Plan / Executive Summary**

The Claiborne 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 is currently being handled in the region by a network of convenience centers that also operate as recycling drop-off sites. The region has a contract to pick up the Class I waste and take it to the landfill. The County picks up the recyclables and takes them to the recycling center at the landfill site. This contract will take the region through the next needs assessment. As shown on the attached map, the convenience centers have been strategically placed throughout the region. A five-mile radius shows that every section of the county can be reached by a convenience center. The region has been very proactive in building convenience centers around growth areas in the past. The lack of any major dumps in the area illustrates that the current convenience centers are taking care of the need for Class I disposal. The cities of New Tazewell and Tazewell contract out the collection of their Class I waste and provide house-to-house collection of Class I waste. The waste is taken by a private company to a regional landfill. The Town of Cumberland Gap provides its own equipment and manpower for the collection of Class I waste house to house and take the waste to the regional landfill. It is the author's belief that the Class I waste is being handled very efficiently for the region of Claiborne and no immediate changes are needed. The City of Harrogate may be pressed to provide house to house collection by its citizens in the future.

Class III/IV waste collection is available at the recycling center. The region does not count the Class IV waste as a diversion because currently the waste is being taken to a Class I landfill for disposal. The region has already begun planning for the development of a Class III transfer station that will dispose of this waste in a Class III landfill within the next needs assessment time period. Since, the space is available at the old landfill site; the author feels that this is a step in the right direction. The only other avenue is for the region to contract out the hauling of the Class IV waste to a Class IV landfill. That is something that the region will need to examine during the next contract period.

Waste tires are being handled efficiently at the recycling center for Claiborne County. The region has a contract with a private company to dispose of the tires when a trailer load is collected (Liberty Tires of Nashville). The state probably needs to provide more funding and possibly more options to keep Liberty Tires honest in providing good service to all of their regions. Other than that, there is no reason to change what is being done for the collection of waste tires.

Used oil collection sites are scattered throughout the region by using the convenience centers for collection. The region is looking at taking advantage of the heaters to save monies in the future and will be put in place during the next

needs assessment. The cities might also need to look at the use of heaters to save monies in heat bills in some of their buildings. The region is adequately covered and no changes are needed.

E waste is something that the region has added since the last needs assessment. E waste is collected at the convenience centers and the recycling center. The region has a contract for the disposal of the waste. The cities do provide for small pick-ups of such waste during annual clean-up days. No changes to the program are needed at the present time.

White goods and metals are collected at the larger convenience centers and at the landfill site. The method of handling the metals is working quite well for the county. The cities also provide for small amounts of collection of metals. The collection sites are there for people to use and the author sees no way that the region could increase such collection.

Brush/Compost has always been collected at the landfill site, but a new way of disposing of the material during the next needs assessment will allow the county to divert that waste from a Class I landfill. The cities in the region have done a good job in providing the collection of brush and leave for its residents and providing the material for mulching, but need to report their activities to the region. There are no changes needed in the region on how the collection of brush and leaves is currently taken place. The region may want to examine the possibility of a joint purchase and ownership of its own tub grinder in the future. That being said all of the entities in the region are handling brush and leaves and it seems to be working fine.

The collection of paint has also been added since the last needs assessment for the region. The region does very little is recycling paint and might want to look at that during the next needs assessment. This would require a site for the plant recycling, which they have room at the landfill site and a building to store the material. The region will need to pay close attention to the labor intensive side of operating a paint reuse center. The region will probably need to experiment on different scenarios to find the most efficient way to handle the paint. Other regions in East Tennessee have been able to utilize prison labor that helps to offset the personnel cost involved in operating a paint recycling center.

Paper and cardboard have always been collected at the convenience centers in the region. The region processes its own paper and cardboard at the Claibonree County Recycling Center. However, the region needs to look at ways to provide for door-to-door collection at the city level. The region has the ability in place to offer single stream recycling, but probably will not happen unless legislation is put in place. Grants to help purchase containers will need to be available for the cities in order to help offset the additional costs that could promote pilot programs within the cities. The region also needs to look at ways to increase their recycling program in the schools. The region will need to secure funding for equipment in the future to expand the program. The region might want to look at an incentive

program at the schools where some of the proceeds go back to the classrooms as a way to increase participation.

The region does not collect glass at the convenience centers and the cities do not provide the service. The market will dictate if the region should make such steps to increase the collection of glass in the future. Glass may become more of a viable option, if meeting tonnage diversion becomes a problem in the future.

In summary, the region has met the 25% waste reduction goal that is mandated by the state. The region needs to do a better job in getting numbers from area businesses and industries and should concentrate on getting more Class III numbers in the future. The region, as illustrated, has made steps to improve the collection of recyclables since the last needs assessment. The region has growth potential in terms of more diversion by having the cities become more active in recycling and the schools to become more involved with recycling. 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 dictated more of a cost benefit analysis on future programs during the next needs assessment period. The region has come a long 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:**

**Claiborne County Solid Waste Department**

**Claiborne County Home Page**

**U.S. Census Bureau**

**City of New Tazewell**

**City of Tazewell**

**City of Harrogate**

**Town of Cumberland Gap**

**Tennessee Division of Solid Waste Management**

**www. City-data.com**

**www. Headwaterseconomics.org**

**Tennessee Advisory Committee on Intergovernmental Relations**

**Center for Business and economic Research**

