Sevier
Solid Waste
Needs Assessment
2012

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 2020 is based on existing trends for each jurisdiction as well as knowledge of the area.

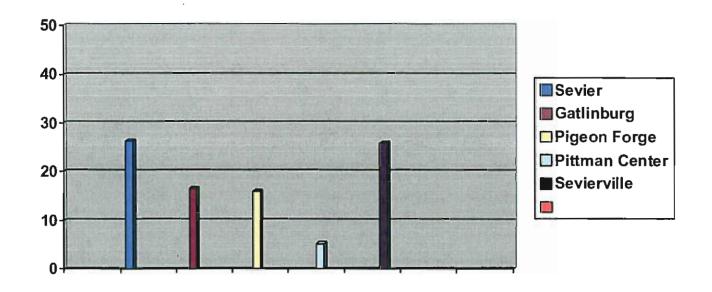
The county as a whole is expected to continue to increase in population between 2010 and 2020. Sevier County has seen significant growth compared to that of East Tennessee and the State of Tennessee. Sevier County will continue to see modest growth during the next needs assessment time period that should keep the solid waste issues manageable in the future.

The entities of the region will see the following growth. The City of Gatlinburg after an initial decline in growth has seen a modest increase that will show a 25% increase during the next needs assessment, but their population numbers are low that accentuates percentages. The City of Pigeon Forge will also see modest growth during the next needs assessment with their population growth more then double in the last twenty years. The City of Pittman Center will continue to see very little growth within the upcoming needs assessment time period. The City of Sevierville will see the largest growth between needs assessments with over an additional 6,000 residents. There are no known factors over the next needs assessment that should greatly affect the forecasted growth in the area. The region of Sevier County has not been greatly affected from citizen growth during their needs assessments, but is greatly affected from the tourism trade. The economy has slowed down that growth in the last five years, but there is a great potential for another explosion of growth during the next needs assessment. The tourism growth can continue to be handled with the composting facility that is already in place and recycling efforts have increased to offset any waste that cannot be composted. The future waste stream should not become unmanageable in the future.

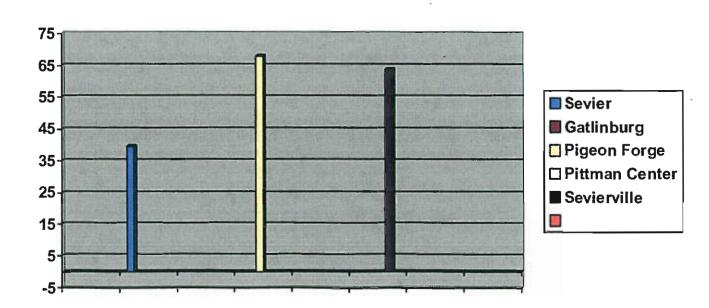
Jurisdiction	1990	2000/% change	2010 / %	2020 / %
Sevier	51,043	71,170/39.4%	89,889 / 26.3%	106,928 / 16%
County				
Gatlinburg	3,417	3,382/-1.0%	3,944 /16.6%	5,247 / 25%
Pigeon	3,027	5,083 /67.9%	5,875 / 16.0%	7,782/ 25
Forge				
Pittman	478	477 /2%	502/ 5.2%	706 / 29%
Center				
Sevierville	7,178	11,757/63.8%	14,807/26.0%	20,037/26%

Sevier County and Cities

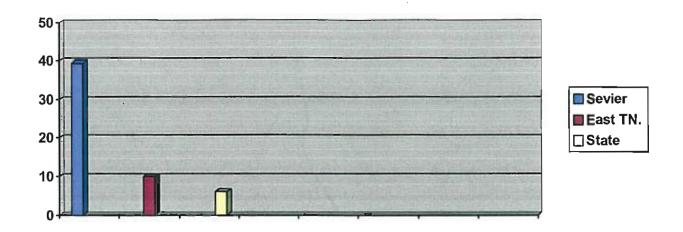
Population Growth Percentage: 2000 - 2010



Population Growth: 1990-2000



Population Growth: 2000 - 2010



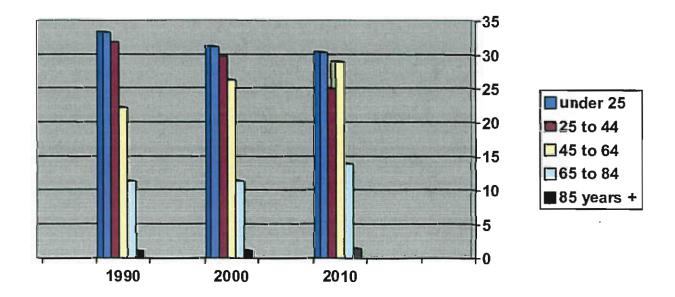
Item 2 Region Economies

The following table and charts show the per capita incomes for the county and each municipality in 1990, 2000 and 2010. 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 Sevier County has increased every census year from 29.7 (1980), 35.4 (1990), 38.1 (2000), and 40.9 (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	17,026	33.4	22,537	31.3	27,332	30.4
25 to 44	16,258	31.9	21,206	29.8	22,607	25.1
45 to 64	11,351	22.2	18,702	26.3	26,033	29.0
65 to 84	5,850	11.4	8,152	11.4	12,611	14.0
85 years and older	349	1.1	843	1.2	1,306	1.5

Age Distribution

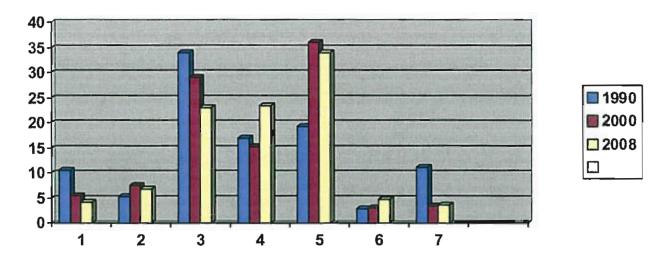


The estimates for the current per capita incomes show that most all entities have experienced an increase in the purchasing power of their residents. Most residents are likely to use this increased purchasing power to spend more monies in the future. This is likely to mean an overall increase in solid 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 Sevier has seen its per capita increase 51.5% in the last twenty years. This increase is compared to the State increase of 48%. The Sevier County Region is largely a consumer base region in terms of jobs and that is why it still lags behind the State in per capita income. The region is not attracting the high paying technology jobs and there are no signs that it will change in the next needs assessment time period. Knowledge of the area would suggest that the region has been fortunate to have large tourist industries that have been able to grow without the ups and downs of the economy.

Jurisdiction	1989	1999	2010	2015
Sevier County	\$10,848	\$18,064	\$21,062	\$24,011
Gatlinburg	\$15,204	\$19,678	\$22,435	\$25,127
Pigeon Forge	\$10,887	\$16,621	\$18,591	\$20,636
Pittman Center	\$12,411	\$19,862	\$22,917	\$25,896
Sevierville	\$12,001	\$18,576	\$18,856	\$19,139
Tennessee	\$12,255	\$21,587	\$23,418	\$27,165

The following table takes a look at the types of businesses in Sevier 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 jobs have continued to decline which will generally produce a lot of cardboard, paper and glass that can be recycled. The trade and finance jobs have maintained a strong second in job creations for the region, they can produce a lot of paper and food waste that can be handled by the region. The professional services has continued to rise in the region and will also create a lot of paper and food waste that can be handled by the region. The economy has not had a diminish toll on Sevier County with jobs seeing a modest increase from 2000 to 2009 of about 6,177 jobs created.

Industry	1990	2000	2010
1. Agriculture, Forestry,	2.2%	1.0%	.5%
Fisheries, Mining			
2. Construction	10.1%	10.8%	10.2%
3.Manufacturing	16.4%	11.4%	6.6%
4.Trade and Finance	33.4%	24.2%	30.2%
5.Professional Services	18.0%	45.3%	45.6%
6.Public Administration	3.2%	2.9%	2.7%
7.Other	16.7%	4.5%	4.3%

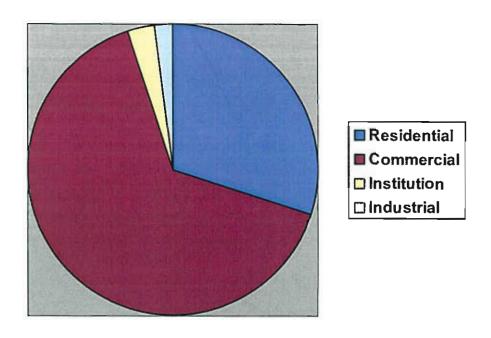


In looking at the job patterns for the region, one can see that there has been more of a shift from the labor intensive jobs to the white collar jobs in the region. Professional Services jobs have seen the largest increase from 1990 to 2010. Manufacturing jobs have continued to diminish in the region. The numbers above show that Sevier Counties tourism trade is alive and well, which reflects on the retail trade in the area. Construction numbers have remained steady during the last census and have shown the potential for growth as the economy begins to improve during the next needs assessment era. The Region of Sevier 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

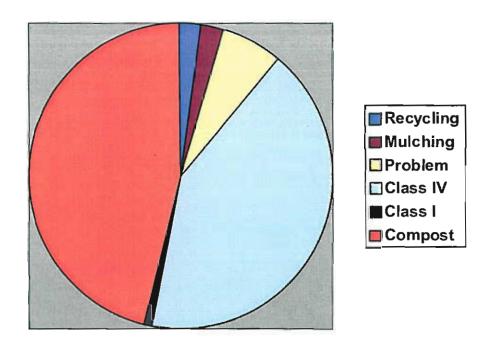
Sevier County solid waste stream is shown below.

Residential 30% Commercial 65% Institution 3% Industrial 2%



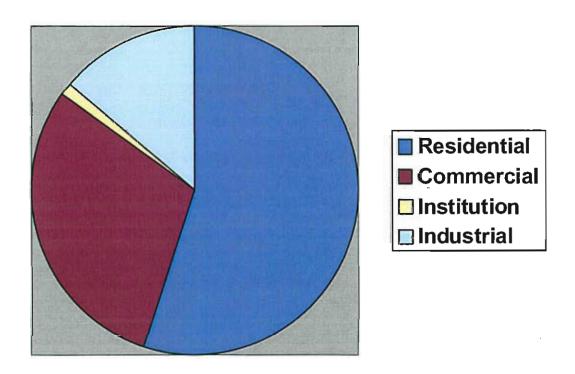
This can be further broken down into the following: This is county report waste only not industrial, commercial.

Recycling -3,698 -2.3% Compost - 75,638 -46.2% Mulch - 3,797 - 2.3% Problem Waste - 10,622 - 6.5% Class IV Waste - 68,904 - 42.0% Class I Waste - 1,079 - .7% Total = 163,738 - 100.0%



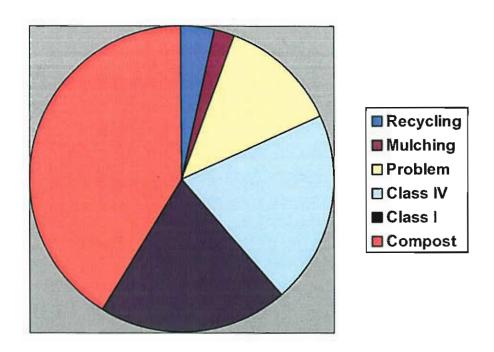
The waste stream during the last needs assessment looked like the following.

Residential 55% Commercial 30% Institution 1% Industrial 14%

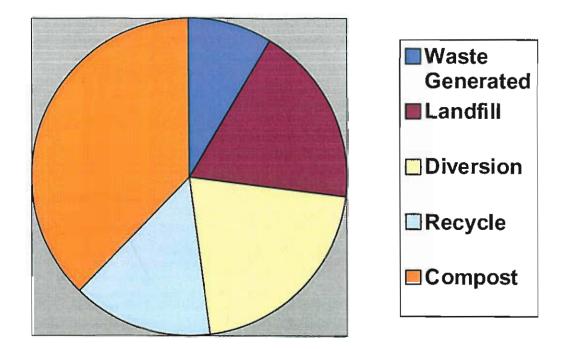


This can be further broken down into the following.

Recycling -5,677 -3.6% Mulching - 3,577 - 2.2% Compost - 66,065 - 41.3% Problem Waste - 19,900 - 12.4% Class IV Waste - 32,625 - 20.4% Class I Waste - 32,061 - 20.1% Total = 159,905 - 100.0%

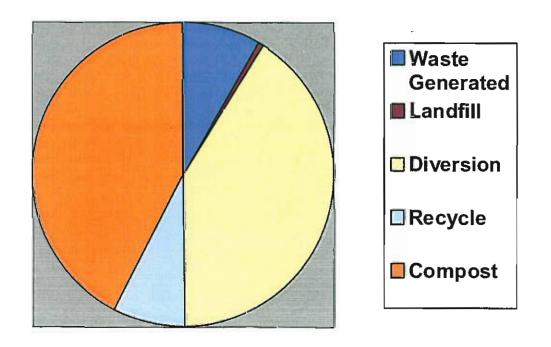


Waste Stream 2005 Totals



Waste Stream 2011 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 20.1% in 2005 and is now .7% of the waste. Diversion methods where shown at 22.6% in 2005 and are now shown as 44.3 % in 2011. Recycling efforts shown as 16% in 2005 are now shown as 8.8% in 2011. The chart shows that the generated waste has increased from 159,905 in 2005 to 163,738 in 2011. The main reason for the small increase versus the population increase is that recycling efforts have increased in the region in terms of households doing a better job. The 1995 base year rate of 2.0 tons per person is compare to the 2011 report that shows a tonnage per person of 1.8 tons per person. The State average is .90 tons per person. This shows that the region has continued to provide alternative recycling opportunities from the traditional cardboard and paper recycling. The regions numbers are skewed in that waste generated from Commercial and Industries is also included in this number. The most important number in terms of diverting waste from the landfill is that 2011 shows .7% of waste going to a Class I and 42.7% of their waste is going to any kind of landfill.

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

Class I waste is being handled through a network of convenience centers that are serviced by the County. A total of ten (10) convenience centers are scattered throughout the county and one (1) composting facility that is also used as 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 a roll off system for seven of the centers and 6 cu. yd containers and a front end loader refuse truck for the other three centers and all the waste is taken to the Compost Facility in Pigeon Forge for disposal. The City of Gatlinburg collects Class I waste door to door for their customers and takes the waste to a transfer station and from their transports the waste to the compost facility. The City of Pigeon Forge, Pittman Center and Sevierville all collect Class I waste door to door and haul directly to the compost facility. The Class I waste is separated at the compost facility and whatever waste cannot be ran through the compost site is diverted to the Class III/IV landfill or recycled such as metals. The Sevier County landfill has enough life to take care of the next needs assessment period.

C&D waste or Class IV waste is collected at all of the convenience center sites by placing a roll-off container at the sites. The waste is then transported to the Compost Facility site that has a class IV landfill for disposal. The City of Gatlinburg will collect if a resident sets it out and takes to the landfill site. The City of Pigeon Forge and Sevierville will also takes small amounts from residents and take to the landfill site. The City of Pittman Center does not provide that service for its residents. A total of 68,805 tons of waste was collected and diverted from a class I landfill.

Waste Tires are not publicly collected in the region, but are collected by private establishments in the region. A total of six hundred fifty two (652) tons of tires were collected and diverted from the Class I landfill in 2011.

Used Oil is collected at all ten of the convenience centers and that waste is sold to a private company. All of the sites have a used oil platform that is covered to collect the used oil, oil filters and anti-freeze. The compost facility does not accept used oil. Pittman Center does not have any used oil sites for its residents. The City of Pigeon Forge and Sevierville rely upon private companies to provide for the collection of used oil in their cities. The City of Gatlinburg does collect used oil at their public works garage site and uses it for heat. A total of thirty –six (36) tons of used oil was collected in 2011.

E-Waste is collected at all of the convenience centers and the waste is picked up directly by a private company. Television monitors are only collected at two of their larger sites. The compost facility does not collect e-waste. Gatlinburg and Sevierville residents take their e-waste to a Goodwill Facility for collection. Pigeon Forge has their own e-waste collection site and handles their e-waste directly with a private firm. Pittman Center does not provide this service for its residents. A total of sixty – nine (69) tons of electronic waste was collected in 2011.

White Goods / Metals are collected at all of the convenience centers in the County and this is a program that was started a little over a year ago and has generated around \$100,000 this past year that can be used to upgrade the convenience centers as needed. A roll-off container is set out at each center and then when full hauled to Morristown for recycling. None of the cities provide for separate collection of metals, but is included with the garbage pickup and the metals are taken out at the compost facility. Residents are encourage to take metals directly to the compost facility site rather than mix in with their garbage. A total of five hundred twenty (520) tons was collected in 2011.

Brush / Compost materials are not collected at any of the convenience centers. Residents are directed to take their brush to the Pigeon Forge Greenway a private fire that collects for a small fee. The cities of Gatlinburg, Pigeon Forge and Sevierville provide brush collection for their residents and take the brush to the compost facility site that has a place for the brush and once a year the brush is grinded and the chips are used in the bio-filter for the compost facility plant. The City of Pitman Center does not provide this service for its residents. The cities also provide for leaf collection and provide the same arrangement as the brush. A total of three thousand seven hundred ninety seven (3,797) tons was collected in 2011.

Sewer sludge that is being produced by the utilities in the region and has been used in the past for alternate cover for the landfill. A total of 9,716 tons was diverted in 2011. 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 ton truck and taken to the compost site for use as a landfill cover.

Paint is collected at the convenience centers as long as the resident has dried out their latex paint, no oil based paint is accepted. The paint is then placed in the demolition dumpster and taken to the Class IV landfill site. None of the cities provide the collection of paint for their residents. The region of Sevier does provide for HHW events that allows for the collection of oil base paints. Paint is not being accounted for due to the fact that it is mixed in with the Class IV waste collected a the convenience centers.

Paper is collected at each convenience center site and all of the cities as part of their refuse waste. Since, paper is an acceptable commodity that can be composted at the site; there is no reason to separate the material out of the normal waste stream. A total of fifteen tons (15) tons of newspaper was reported in 2011.

Cardboard is collected at all of the convenience centers by placing in roll-off containers and then when full hauled to the compost facility site and the cardboard is baled and taken to the market place. The cities of Gatlinburg, Pigeon Forge and Sevierville have containers set out in their respective cities that collected cardboard and that is hauled to the compost facility for processing. The City of Pittman Center does not provide that collection for their residents. A total of 1,188 tons of cardboard was collected and properly disposed of in 2011 by the region.

Plastic is collected at all of the convenience centers as part of their garbage and that waste is utilized in the composting facility. The City of Gatlinburg does utilize Goodwill Industries to collect plastic that is traditionally recycled by that company. None of the cities provide for a public collection of plastic. A total of nineteen (74) tons of plastic was recycled in 2011.

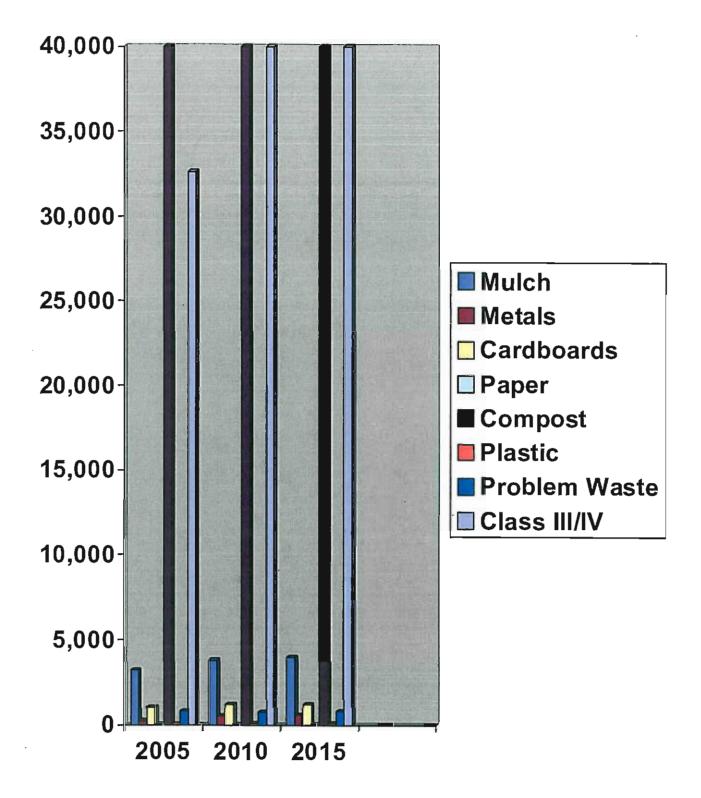
Glass is collected at the convenience centers as part of their garbage and that waste is utilized in the composting facility that has the means to pulverize the glass into a sand product. Goodwill Industries in Gatlinburg does provide for some glass collection that is recycled. None of the cities provide for a public collection site for glass. No glass was reported in 2011.

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 -2011	Material –2015
Sanitation -	32,061	1,079	1,000
Land filled			
Metals / White	218	521	600
Goods			
Cardboard	1033	1188	1200
Paper	19	15	22
Glass	0	0	0
Plastic	0	74	75
Problem Waste	826	763	830
- tires,			
batteries,			
automotive fluid,			
e-waste, paint.	,		_
Sewer Sludge	8888	9716	9800
Mulch	3212	3798	4000
Compost	66,065	75,638	77,000
Class III/IV	32,625	68,805	70,000
Total Generated	144,947	161,597	164,527

The 2015 number is a simple guess with very little data to go on. This will also affect the Total Generated for 2015. The above 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 Sevier County utilizes ten (10) convenience centers and the compost facility to collect Class I waste for Sevier County. All of the cities in the region, which include Gatlinburg, Pigeon Forge, Pittman Center and Sevierville utilize their own equipment to collect and haul their waste. The residents pay a monthly fee to have the curbside service. Waste in the region is taken to the compost facility located in Pigeon Forge whatever cannot be composted or recycled is then transported to the Class I landfill in Sevier County. The current landfill site has enough landfill space to cover the next needs assessment time period from 2011 to 2016.

Class IV waste can be taken by Sevier County residents to the convenience center sites and then is taken to the Class IV landfill site. The cities will pick up small amounts of Class IV waste from its residents. Large amounts or work done by a contractor is directed to take the waste directly to the Class IV site. The class IV site has enough landfill space to cover the next needs assessment time period.

Brush and leaves are not collected for county residents and they must take that waste to a private company in Pigeon Forge. All of the cities except Pittman Center provide for such collection door to door for their citizens and that waste is taken to the compost facility where it is grind once a year into chips that are used at the composting facility plant. It should be noted that leaves can be directly dumped onto the compost facility tipping floor upon the direction of the manager. Brush must always be taken to the brush site that is near the composting facility.

Tires are generally not collected publicly by the region, but are collected by private establishments in the area. The City of Sevierville does provide for small collection of tires 1-5 in range from their citizens and have a trailer that is placed on their center for collection and hauling away by a private company.

Metals are collected at all of the convenience centers and sold to a private firm for revenue that can be used back into the convenience center capital improvements program. All of the cities except Sevierville don't collect metals but instructs their citizens to not put it in their garbage. Sevierville does have a container that is provided by Sevier Solid Waste that collects the metals and then the revenues that are generated is given to Keep Sevier Beautiful. Sevierville being the largest city is probably a good attempt of taken the metals out before they arrive at the compost facility and they have to be taken out by their employees.

The traditional recycling items that one identifies with are handled quite different in region. Paper is considered garbage and can be placed directly into the compost facility. Sevierville does have containers at their recycling center sites that collect mainly newspapers and magazines. Goodwill Industries in Gatlinburg also collects paper products. Plastic is also considered as general garbage when being collected by the cities. The City of Sevierville does also have a container for plastic that collects the plastic to be recycled. Glass is also considered as general garbage and none of the cities separate out glass. Cardboard cannot be placed into the composting facility site, so it must be treated like a normal recycling item. The City of Pigeon Forge has containers out in the city that collects the cardboard. The City of Gatlinburg utilizes the Goodwill Collection site. The City of Sevierville provides containers at the recycling sites for the collection of cardboard. All of the cardboard is taken to cardboard facility near the composting facility where it is baled and sold to a private company.

Used oil that is collected in the region is mostly sold to a private company. The City of Gatlinburg does collect and uses the used oil to heat their public works garage.

E-Waste is collected by all of the entities in the region, except Pittman Center. Pigeon Forge, Sevier County and Sevierville handle their own e-waste and Gatlinburg has Goodwill take care of theirs. Sevier Solid Waste that operates the compost facility does not collect e-waste.

Paint is collected at the convenience centers and the landfill sites. Both sites will only take if the paint has been dried out by the resident. No oil base paint is collected until there is a region wide HHW event. The Cities will not collect paint from their residents.

Sewer sludge is being recycled at the utility by drying the sludge then taken it to landfill site for cover application.

Composting is the way that most of the waste in the Sevier Region is handled. The composting facility operates a rotary drum system that takes waste from the region and turns that waste into compost that is sold as a by-product. Where most regions would have to separate recyclables from the garbage on the front end, the composting facility allows the recyclables to go through the process and create a end use, such items as plastic, glass and paper no longer need to be separated out.

Section 5 - Sevier County Reduction Rate

Current	Current	Base	Current	%	Real Time
Year	Year	Year	Year	Reduction	Comparison
Generation	Disposal	Disposal	Population	compared	
				to Base	
				Year	
163,738	1,079	47,634	89,889	56%	99.3%

The region of Sevier 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 commercial establishments where reporting. Since, the region of Sevier has the composting facility and their diversion rate is annually 90% or better, there is little incentive to get these numbers. Since the original solid waste plan was implemented that included the composting facility. The compost facility went through a fire that has given the region an opportunity to upgrade the system at the facility. The region has added facilities to handle the items that cannot go through the compost facility, but still can be recycled.

Class I waste in the region of Sevier County will continue to be handled the same way during the next needs assessment. The landfills being used by the County has enough permitted landfill space to operate for another needs assessment period. 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. The county has been able to get new monies to help upgrade facilities with the selling of metals that will help to keep the convenience centers running smoothly. All of the cities seem to be satisfied with running their own solid waste systems rather than contracting out that service.

Class IV waste in the region of Sevier County is being handled in a very efficient method and the fact that convenience centers allow for such collection has probably helped the region in receiving a high waste reduction diversion. If the region didn't allow for this collection at the convenience centers most of that waste would end up on the mountain side and that would definitely effect the tourist traffic in the area. There does not seem to be any reason for the region to change how they handle Class IV waste at the present time.

Waste tires are being handled quite different then other regions in the area with private establishments providing the collection of tires rather than the public entities. It seems to be working for the region and the region does have enough space available at the composting site to provide for that collection in the future if needed. No changes in the process are needed for the region during the next needs assessment.

Used oil drop-offs have been made accessible to most residents in the region by way of the convenience centers. Would it make sense for the county to use this oil to heat some of their buildings rather than selling the used oil? This is something that the region should explore during the next needs assessment. The City of Gatlinburg does use use oil for heat and that seems to be working fine for them. The other cities right now are happy that they don't have to provide any collection sites and use the private establishments for that collection. 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. The City of Pigeon Forge and Sevierville handle the collection and recycling of their own e-waste and the City of Gatlinburg has a private company to help them. The City of Pittman Center is so small in population that by not providing this service is probably not affecting the regions solid waste stream. No changes are needed at the present time.

Metals are being collected at the convenience centers and the program is run quite efficiently. The county has been able to get some serious revenue from the sale of metals that will help to offset future costs of upgrading the convenience centers. 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 / Leaves materials in the County that are now being collected are going to the compost facility site. The leaves can directly go into the compost facility and the brush must be collected and then chipped and used at the compost facility site. The County is relying upon a private company to collect brush rather then the convenient center sites and that is probably a good thing due to the room that is needed to collect brush and leaves at the CC sites. The region would have an option to allow residents to directly take their waste to the brush site at the compost facility that currently does not allow this. We have a built in safety net if needed in the future, if what is currently being done becomes a problem. The region may need to get the numbers in the future from the private company in Pigeon Forge that will show what the county residents are doing in order to get a better feel on what the future holds. The program seems to be working fine at the present time and no changes are needed.

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 used as a landfill application that diverts this waste from the class I landfill. This saves the utilities in tipping fee cost and the waste has to be transported somewhere rather a Class I landfill or a Class IV landfill.

Paper is being collected in the region as general garbage due to the composting facility that can take the paper and run it throughout the mixers to make a compost end product. There is no reason to separate out the paper from the general garbage in order to have the paper recycled. The County nor the cities in the region provide for a separation of paper from the general garbage. The City of Sevierville does provide for some collection of newspaper and magazines that they recycled to an end user.

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 person that started that program is now the Director of the Keep Sevier Beautiful. This would be good to get children to understand the importance of recycling and that every place does not have a composting facility and that other areas do have to separate in order to recycle.

Cardboard collection is being done in the region by all entities. The convenience centers have collection sites and the cities provide collection sites. The waste is being handled at the composting facility and is being baled and taken to the market place. Really don't know of anything that they could do to generate more cardboard to be recycled in the region.

Plastic is being collected in the region as general garbage due to the composting facility that can take the plastic and run it throughout the mixers to make a compost end product. There is no reason to separate out the plastic from the general garbage in order to have the plastic recycled. Neither the County nor the cities in the region provide for a separation of plastic from the general garbage. The City of Sevierville does provide for some collection of plastic at their recycling centers located at the police station and the public works compound.

Glass is being collected in the region as general garbage due to the composting facility that can take the glass and have the glass pulverized and run it throughout the mixers to make a compost end product. There is no reason to separate out the glass from the general garbage in order to have the glass recycled. Neither the County nor the cities in the region provide for a separation of glass from the general garbage.

The region of Sevier County has made great strides in providing new services to its residents in terms of recycling.

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

Site Name	Annual Tons Disposed by Sevier County	SNL Permit #	Current Landfill Capacity (daily throughput)	Maximum capacity	Projected Life of Facility
Sevier Solid Waste	1,100	SNL-78- 0258	3 tons per day	Depends on compaction rate and Landfill Design and Operations Plan	10 years left

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

Service Provider	Service Area	Frequency of Service	Estimated average annual tons collected	Type of Service
Sevier County	County Wide	Five days a week	37,561	Convenience Centers
City of Gatlinburg	City Limits	Once a Week	2,289	Door to Door Collection
City of Pigeon Forge	City Limits	Once a Week	3,408	Door to Door Collection
City of Pittman Center	City Limits	Once a Week	291	Door to Door Collection
City of Sevierville	City Limits	Once a Week	8,588	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 Sevier County Region (Recycling)

Service Provider	Service Area	Type of Service	Recyclables Collected
Sevier County	County Wide	Convenience Centers (recycling drop off sites) Six days a Week	Metals, Used Oil, Cardboard
City of Gatllinburg	City Limits	Goodwill Industry drop off site for recyclables. Used oil collected at city garage. Has a brush and leaf collection program.	Paper, Plastic, glass, e-waste, used oil and metals
City of Pigeon Forge	City Limits	Has a brush and leaf collection service. Collect e-waste from residents when needed.	E-Waste
City of Pittman Center	City limits	No Service	None
City of Sevierville	City Limits	Has two collection sites, one at the police and one at public works. Has a brush and leaf collection program.	Plastic, E-Waste, Metals, Cardboard.

Sevier County has ten registered convenience centers that are scattered throughout the region. All of the convenience centers operate as recycling drop off sites. The operating hours are 8:00 a.m. – 6:00 p.m.; Monday - Saturday.

Sevier County Region has a composting facility that allows some recyclables such as glass, plastic and paper to be collected as part of the garbage and are used in the composting site.

Industries and Commercial establishments coordinate their own recycling efforts.

Item # 7: Solid Waste Management Infrastructure

Sevier County

Expend	litures		
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$1,033,369.00	\$0.00	\$1,033,369.0
Transportation/hauling	\$0	\$0	\$
Collection and Disposal Systems			
Equipment	\$0	\$0	\$
Sites			
Transfer Station	\$0	\$0	\$
Convenience Center	\$261,502.00	\$0.00	\$261,502.0
Recycling Center	\$0	\$0	\$
MRF	\$0	\$0	\$
Landfills	\$781,952.00	\$0	\$781,952.0
Site	\$0	\$0	\$
Operation	\$0.00	\$0	\$0.0
Closure	\$0	\$0	
Post Closure Care	\$0.00	\$0	\$0.0
Administration (supplies, communication cost, etc.)		\$0	
Education	\$13,550.00	\$0	\$13,550.0
Public			
Continuing Education			
Capital Projects	\$0	\$0	
Total	\$2,090,373.00	\$0	\$2,090,373.0
Reve			
Host agreement fee	\$0	\$0	\$
Tipping fees	\$0	\$0	\$ \$
Property taxes	\$2,192,000.00	\$0	\$2,192,000.0
Sales tax	\$0	\$0	
Surcharges	\$0	\$0	\$ \$ \$
Disposal fees	\$0	\$0	\$
Collection charges			
Industrial or Commercial charges	\$0	\$0	
Residential charges	\$0	\$0	\$
Convenience Centers charges	\$22,750.00	\$0	\$22,750.0
Transfer Station charges	\$0	\$0	\$
Sale of Recyclables & Commodity Rebates	\$44,326.00	\$0	\$44,326.0
Other sources: (Grants, bonds, interest, sales, etc.)	\$0	\$0	\$
Total	\$2,259,076.00	\$0	\$2,259,076.0

City of Pigeon Forge

City of Pigeon Forge Exp	enditures		
Description	Present Need	Unmet	Total Needs
•	\$/year	Needs	(Present + Unmet)
		\$/year	\$/year
Salary and Benefits	\$0	\$0	\$
Transportation/hauling		\$0	
Collection and Disposal Systems	\$1,725,937.00	\$0	\$1,725,937.0
Equipment	\$0	\$0	\$
Sites	\$0	\$0	\$
Convenience Center	\$0	\$0	\$
Transfer Station	\$0	\$0	\$
Recycling Drop Off Center	\$0	\$0	\$
MRF	\$0	\$0	\$
Landfills	\$0	\$0	\$ \$ \$ \$ \$ \$ \$ \$
Site	\$0	\$0	\$
Operation	\$0	\$0	\$
Closure – See total under post closure	\$0	\$0	\$
Post Closure Care	\$0	\$0	\$
Administration (supplies, communication cost,	\$0	\$0	\$
etc.)			
Education	\$0	\$0	
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$
Total	\$1,725,937.00	\$0	\$1,725,937.0
Re	evenue\$		
Host agreement fee	\$0	\$0	\$
Tipping fees	\$0	\$0	<u>\$</u> \$
Property taxes	\$1,725,937.00	\$0	\$1,725,937.0
Sales tax	\$0	\$0	\$
Surcharges	\$0	\$0	<u>\$</u> \$
Disposal fees	\$0	\$0	\$
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$
Residential charges	\$0	\$0	\$
Convenience Centers charges	\$0	\$0	\$
Transfer Station charges	\$0	\$0	\$ \$ \$ \$ \$
Sale of Methane Gas	\$0	\$0	\$
Other sources: (Grants, bonds, interest, sales, etc.)	\$0	\$0	\$
Total	\$1,725,937.00	\$0	\$1,725,937.0

City of Pittman Center

City of Pittman Center	100		
	enditures	AND THE PERSON NAMED IN	
Description	Present Need \$/year	Unmet Needs	Total Needs (Present + Unmet) \$/year
Colonia de Donofia	0.0	\$/year	<u>-</u>
Salary and Benefits	\$0	\$0	<u>\$</u>
Transportation/hauling	\$0	\$0	
Collection and Disposal Systems	\$14,027.00	\$0.00	\$14,027.0
Equipment	\$0	\$0	\$
Sites	\$0	\$0	\$
Convenience Center	\$0	\$0	
Transfer Station	\$0		
Recycling Center	\$0	\$0	\$
MRF	\$0	\$0	\$
Landfills	\$0	\$0	\$ \$ \$ \$ \$ \$ \$ \$
Site	\$0	\$0	\$
Operation	\$0	\$0	
Closure – See total under post closure	\$0	\$0	\$
Post Closure Care	\$0	\$0	\$
Administration (supplies, communication cost, etc.)	\$0	\$0	\$
Education	\$0	\$0	
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$
Total	\$14,027.00	\$0	\$14,027.0
	Revenue		
Host agreement fee	\$0	\$0	\$
Tipping fees	\$0	\$0	
Property taxes	\$14,027.00	\$0	\$14,027.0
Sales tax	\$0	\$0	
Surcharges	\$0	\$0	\$
Disposal fees	\$0	\$0	\$
Collection charges			
Industrial or Commercial charges	\$0		
Residential charges	\$0	\$0	\$
Convenience Centers charges	\$0	\$0	9
Transfer Station charges	\$0	\$0	\$
Sale of Methane Gas	\$0	\$0	<u> </u>
Other sources: (Grants, bonds, interest, sales,	\$0	\$0	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
etc.)	Ψ0	Ψ0	4
Total	\$14,027.00	\$0	\$14,027.0

City of Gatlinburg

City of Gattinburg Exp	enditures		
Description	Present Need	Unmet	Total Needs
Бозаправи	\$/year	Needs	(Present + Unmet)
	φ, γοαι	\$/year	\$/year
Salary and Benefits	\$972,756.00	\$0	\$972,756.0
Transportation/hauling	\$0	\$0	\$
Collection and Disposal Systems	\$171,754.00	\$0.00	\$171,754.0
Equipment	\$0	\$0	
Sites	\$0	\$0	_ \$
Convenience Center	\$0	\$0	 \$
Transfer Station	\$0	\$0	\$
Recycling Center	\$0	\$0	
MRF	\$0	\$0	\$ \$ \$ \$ \$
Landfills	\$435,163.00	\$0	\$435,163.0
Site	\$0	\$0	
Operation	\$0	\$0	 \$
Closure – See total under post closure	\$0	\$0	\$ \$ \$ \$
Post Closure Care	\$0	\$0	 \$
Administration (supplies, communication cost,	\$0	\$0	\$
etc.)			•
Education	\$0	\$0	
Public			
Continuing Education			
Capital Projects	\$0	\$0	\$
Total	\$1,579,673.00	\$0.00	\$1,579,673.0
R	levenue		
Host agreement fee	\$0.	\$0	\$
Tipping fees	\$0	\$0	\$
Property taxes	\$1,316,446.00	\$0	\$1,316,446.0
Sales tax	\$0	\$0	\$
Surcharges	\$0	\$0	\$
Disposal fees	\$0	\$0	\$
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$
Residential charges	\$263,227.00	\$0	\$263,227.0
Convenience Centers charges	\$0	\$0	\$
Transfer Station charges	\$0	\$0	\$ \$ \$
Sale of Methane Gas	\$0	\$0	\$
Other sources: (Grants, bonds, interest, sales,	\$0	\$0	\$
etc.)			
Total	\$1,579,673.00	\$0	\$1,579,673.0

City of Sevierville

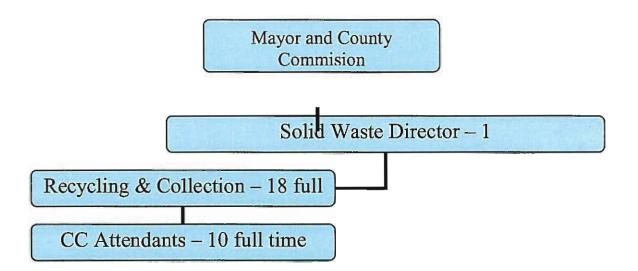
City of Sevierville	ondituros		
	enditures	I I and a district of the second	Tatal Na ada
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$602,782.00	\$0	\$602,782.0
Transportation/hauling	\$0	\$0	φου <u>2,7υ2.υ</u>
Collection and Disposal Systems	\$347,063.00	\$0.00	 \$347,063.0
Equipment	\$0	\$0	φοτι,σσο.σ \$
Sites	\$0	\$0	- \$
Convenience Center	\$0	\$0	\$ \$ \$ \$
Transfer Station	\$0	\$0	_ \$
Recycling Center	\$0	\$0	
MRF	\$0	\$0	
Landfills	\$584,934.00	\$0	\$584,934.0
Site	\$0	\$0	
Operation	\$0	\$0	\$ \$ \$ \$
Closure – See total under post closure	\$0	\$0	
Post Closure Care	\$0	\$0	<u>_</u>
Administration (supplies, communication cost, etc.)	\$0	\$0	\$
Education	\$0	\$0	\$
Public	ΨΟ		
Continuing Education			
Capital Projects	\$226,000.00	\$0	\$226,000.0
Total	\$1,760,779.00	\$0.00	\$1,760,779.0
	evenue	Ψο.οο	Ψ1,100,110.0
Host agreement fee	\$0	\$0	\$
Tipping fees	\$0	\$0	
Property taxes	\$1,120,279.00	\$0	\$1,120,279.0
Sales tax	\$0	\$0	
Surcharges	\$0	\$0	<u>\$</u>
Disposal fees	\$0	\$0	\$
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$
Residential charges	\$619,000.00	\$0	\$619,000.0
Convenience Centers charges	\$0	\$0	
Transfer Station charges	\$0	\$0	\$ \$ \$
Sale of Methane Gas	\$0	\$0	\$
Other sources: (Grants, bonds, interest, sales, etc.)	\$21,500.00	\$0	\$21,500.0
Total	\$1,760,779.00	- \$0	\$1,760,779.00.0

Sevier Solid Waste

Exp	enditures		
Description	Present Need \$/year	Unmet Needs \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	\$1,031,046.00	\$0	\$1,031,046.0
Transportation/hauling	\$0	\$0	
Collection and Disposal Systems	\$0	\$0	\$
Eguipment	\$0	\$0	
Sites	\$0	\$0	\$ \$ \$ \$
Convenience Center	\$0	\$0	
Transfer Station	\$0	\$0	
Recycling Center	\$49,214.00	\$0	\$49,214.0
Compost	\$820,045.00	\$0	\$820,045.0
Landfills	\$501,524.00	\$0	\$501,524.0
Site	\$0	\$0	
Operation	\$0	\$0	\$ \$ \$
Closure – See total under post closure	\$0	\$0	\$
Post Closure Care	\$156,925.00	\$0	\$156,925.0
Administration (supplies, communication cost, etc.)	\$0	\$0	\$
Education	\$0	\$0	
Public			
Continuing Education	_		
Capital Projects	\$0	\$0	\$
Total	\$2,558,754.00	\$0.00	\$2,558,754.0
R	evenue		
Host agreement fee	\$0	\$0	\$
Tipping fees	\$3,588,880.00	\$0	\$3,588,880.0
Property taxes	\$0	\$0	\$
Sales tax	\$0	\$0	
Surcharges	\$0	\$0	\$
Disposal fees	\$0	\$0	\$
Collection charges			
Industrial or Commercial charges	\$0	\$0	\$
Residential charges	\$0	\$0	\$
Convenience Centers charges	\$0	\$0	\$
Transfer Station charges	\$0	\$0	\$
Sale of Methane Gas	\$0	\$0	\$
Other sources: (Grants, bonds, interest, sales, etc.)	\$139,126.00	\$0	\$ \$ \$ \$ \$139,126.0
Total	\$3,728,006.00	\$0	\$3,728,006.0

Item #8: Solid Waste Department Organization and Location

Sevier County

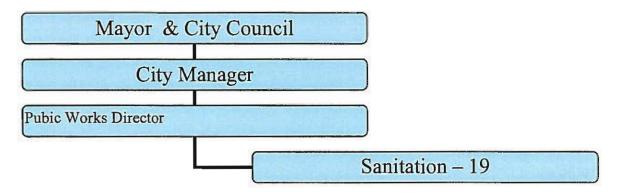


Sevier County has ten convenience centers with the following locations:

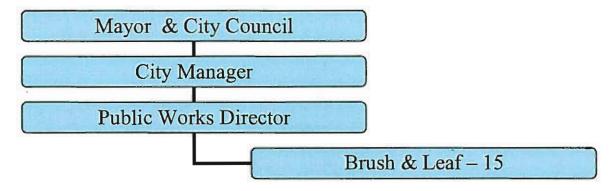
- 1. Pittman Center CC 3362 East Parkway, Gatlinburg, TN. 37738
- 2. Newport Highway CC 1696 Newport Highway, Sevierville, TN. 37862
- 3. Kodak CC 3486 Douglas Dam Road, Kodak, TGN. 37764
- 4. Boyd's Creek CC 1207 Hodges Bend Road, Sevierville, TN. 37876
- 5. White School CC 705 White School Road, Sevierville, TN. 37876
- 6. Pigeon Forge CC 447 Tiger Drive, Pigeon Forge, TN. 37863
- 7. Bird's Creek CC 3350 Bird's Creek Road, Sevierville, TN. 37876
- 8. Allensville CC 759 Allensville Road, Sevierville, TN. 37876
- 9. Floyd's Market CC 12221 Chapman Highway, Seymour, TN. 37865
- 10. Jones Cove CC 4095 Jones Cove Road, Sevierville, TN> 37876

Sevier County has as a compost facility that is located at 1826 Ridge Road, Pigeon Forge, TN. 37863

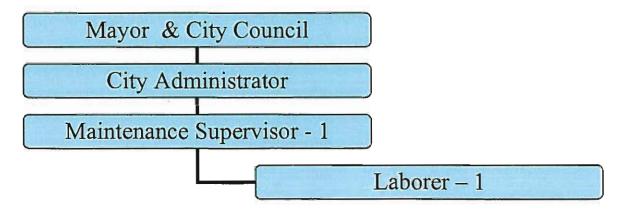
City of Gatlinburg



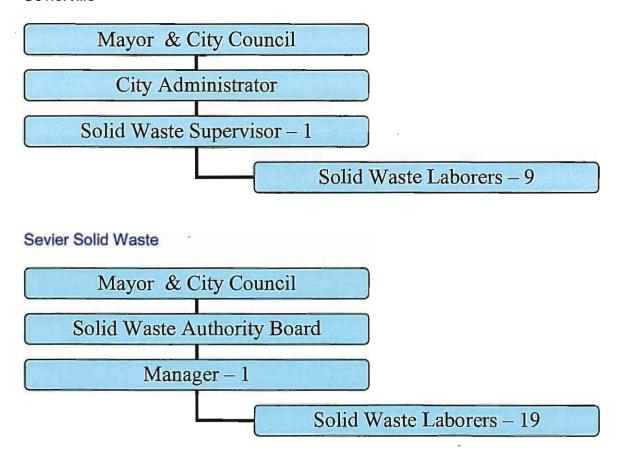
City of Pigeon Forge



City of Pittman Center



Sevierville



Item #9: Future Waste Management Needs

Sevier County Region

Equipment	Operational Use	Estimated Cost	Potential Revenue Source	Entity
Sorting Line	Recycling	\$50,000	Sale of Recyclables	Sevier Solid Waste
Eddy Current	Compost	\$64,000	Avoided landfill costs	Sevier Solid Waste
Magnet	Compost	\$13,500	Avoided landfill costs	Sevier Solid Waste
Star Screen	Compost	\$325,000	Avoided landfill costs	Sevier Solid Waste
Baler	Recycling	\$65,000	Sale of Recyclables	Sevier Solid Waste

Facility	Operational	Estimated	Potential	Entity
	Use	Cost	Revenue	
			Source	
Recycling Sort	Compost Site	\$500,000	Tipping Fees	Sevier Solid
Facility				Waste

The region of Sevier 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 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 efficiency with the handling of waste is for a sorting line that would help to sort out the unwanted items in the single stream waste that goes to the compost facility.

Item # 10: Residents Attitude and Participation

No formalized surveys have been done to measure the public's attitude of Sevier 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. The region of Sevier has spoiled their residents in that a lot of the materials that would normally have to be recycled out from the Class I waste can be included and ran throughout the compost facility. 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. Teaching kids the importance of recycling is futile unless we have means to let them practice what is being taught. The region of Sevier County has the resources available to grow with the public in terms of recycling.

Item # 11: Regional Solid Waste Plan / Executive Summary

The Sevier 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 collects the Class I waste and takes it to the compost facility. At the compost facility items are screen to determine, if any waste such as metals, plastic and aluminum and that is taken to the Class I landfill or recycled. The County will not be changing the way they collect Class I waste during 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. All of the cities in the region collect Class I waste door to door. The cities of Pigeon Forge, Sevierville and Pittman Center haul directly to the composting site. The City of Gatlinburg takes the waste to a transfer station within the city limits and then transports the waste to the compost facility. It is the author's belief that the Class I waste is being handled very efficiently for the region of Sevier and no immediate changes are needed.

Class III/IV waste is collected at all of the convenience centers by placing containers out for the demolition waste. The containers when full are hauled directly to the landfill located near the compost facility. Although, the City of Pigeon Forge and Gatlinburg will pick up small amounts from their residents. The only city that provides for collection is the city of Sevierville that will collect twice a month and take to the landfill. The region seems to have a good program going for the collection of Class IV waste, especially allowing for that collection at the convenience centers.

Waste tires are being handled efficiently in the region by allowing for the private companies in the area to provide for collection for the residents. There are five sites in the region that seems to be working quite well. The city of Sevierville provides for some small collection of tires for their residents and provides for their own disposal of those tires. The state could be a fall back to providing such collection during the next needs assessment, if the private companies were to no longer provide that service. There is adequate room at the compost facility or landfill site to provide for such collection, if needed.

Used oil collection sites are provided at each of the convenience centers. The City of Gatlinburg is the only city that will provide for the collection of used oil and uses that used oil for heat. There seems to be adequate sites for the collection of used oil. The county might want to examine the benefit of using the used oil for heat in some of their county buildings.

E waste is something that the region has added since the last needs assessment. E-waste is collected at all of the convenience centers. The City of Gatlinburg relies upon Goodwill Industries for the collection of their e-waste. The cities of Pigeon Forge and Sevierville collect their own e-waste and handle the disposal of that waste. I don't see an area of need for the collection of e-waste, since the convenience centers provide for that collection. No changes to the program are needed at the present time.

White goods and metals are collected at all of the convenience centers in the region. The metals being collected have brought in revenues that are earmarked for convenient center improvements in the future. All of the cities provide for the collection of metals, with the City of Pigeon Forge selling their own metals. The City of Sevierville allows Sevier Solid Waste to handle the collection and those revenues go to Keep Sevier Beautiful. The collection sites are there for people to use and the author sees no way that the region could increase such collection.

Brush and leaves are not collected by the county and are not allowed to be disposed of at the convenience centers or the compost facility. The cities of Pigeon Forge, Gatlinburg and Sevierville provide door to door collection of these materials. The brush is taken to the compost facility site and once a year in grind into chips that are used in the bio-filters at the compost site. The leaves are often allowed to be dumped directly onto the tipping floor at the compost facility site. County residents are directed to take their waste to a private company in Pigeon Forge and are charge a nominal fee for the disposal. During the next needs assessment, see no reason why county residents could not dump their brush at the compost site, except for traffic control problems.

The collection of paint is still an area in the region that is lacking. No one provides for the recycling of paint and the convenience centers and Sevierville do provide areas to dump the paint as long as it has been dried. As long as the compost facility is up and running, there is no incentive to recycle paint. The only incentive would be to get better diversion numbers, which is not a problem at the present time. 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 is being collected in the region as general garbage that is taken to the compost facility. There is no reason to separate the paper from the Class I waste. The schools may look at doing this during the next needs assessment as away to show the school kids how you recycle such waste. The city of Sevierville does provide for the collection of some magazines and newspaper.

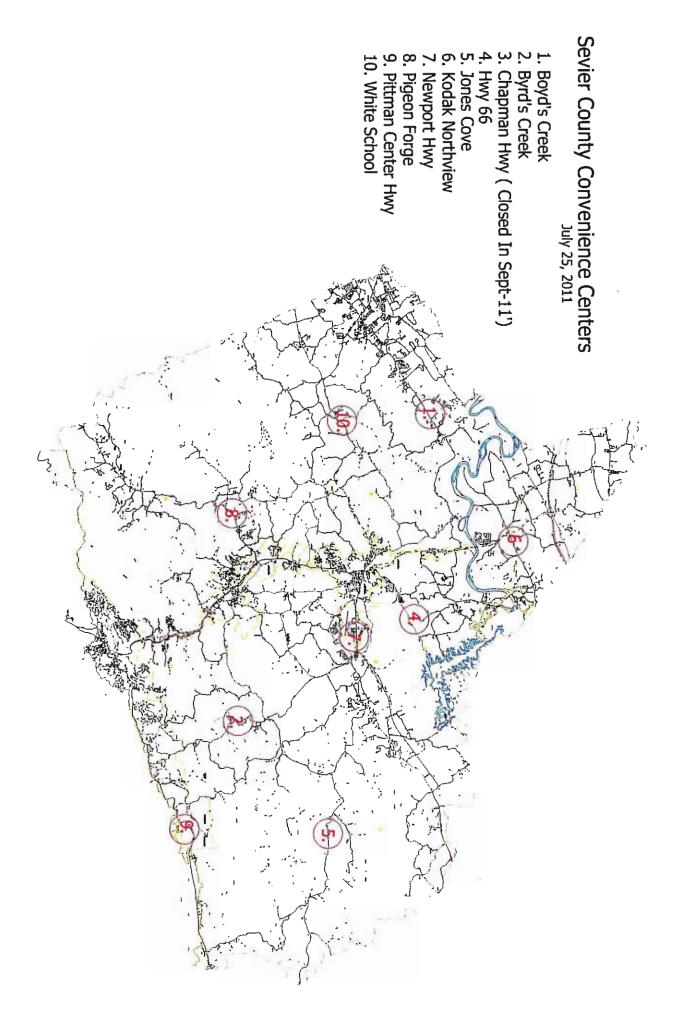
Cardboard is collection by all the entities in the region. The convenience centers have collection sites and the cities have collection sites. The material collected is taken directly to the processing building located next to the compost facility sites. The cardboard is then baled and prepared for the market place.

Traditionally, the region has not collected glass as a recyclable item, but has allowed the glass to be collected as part of the Class I waste. The glass is pulverized and made into a fine sand. Problems have arisen where larger cullets of glass are making it to the composting floor that has caused problems. During the next needs assessment another means for taking the glass out of the collected Class I waste will be examined.

In summary, the region has met the 25% waste reduction goal that is mandated by the state. The region could do a better job in getting recycling numbers from area businesses and industries that recycle Class I waste. The numbers are not needed and this maybe the author way to say something negative. The region does an excellent job in the handling and disposal of its waste. The region needs to find better ways to handle paint and will examine ways to divert glass. The region, as illustrated, has made steps to improve the collection of recyclables since the last needs assessment. The economy has dictated more of a cost benefit analysis on future programs during the next needs assessment period. The region has came 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:

Sevier County Solid Waste Department
Sevier Solid Waste Authority
Sevier County Home Page
U.S. Census Bureau
City of Gatlinburg
City of Pigeon Forge
City of Pittman Center
City of Sevierville
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



State of Parts Security.

Solid Waste

2011

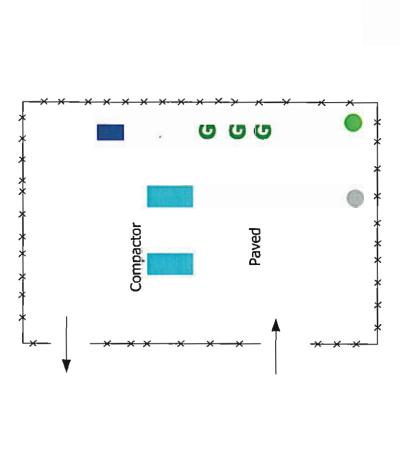
Attendent Office

Legend

Recycling Containers

Fence

Portable Used Oil



Boyds Creek Rd

Elev. 948 Ft N 35°55. 270' W 83° 40.54'

G Garbage Recepticals

NOT TO SCALE Prepared By: ETDD

July 29, 2011

Boyd's Creek Convenience Center 2538 Boyd's Creek Rd. Sevierville, TN





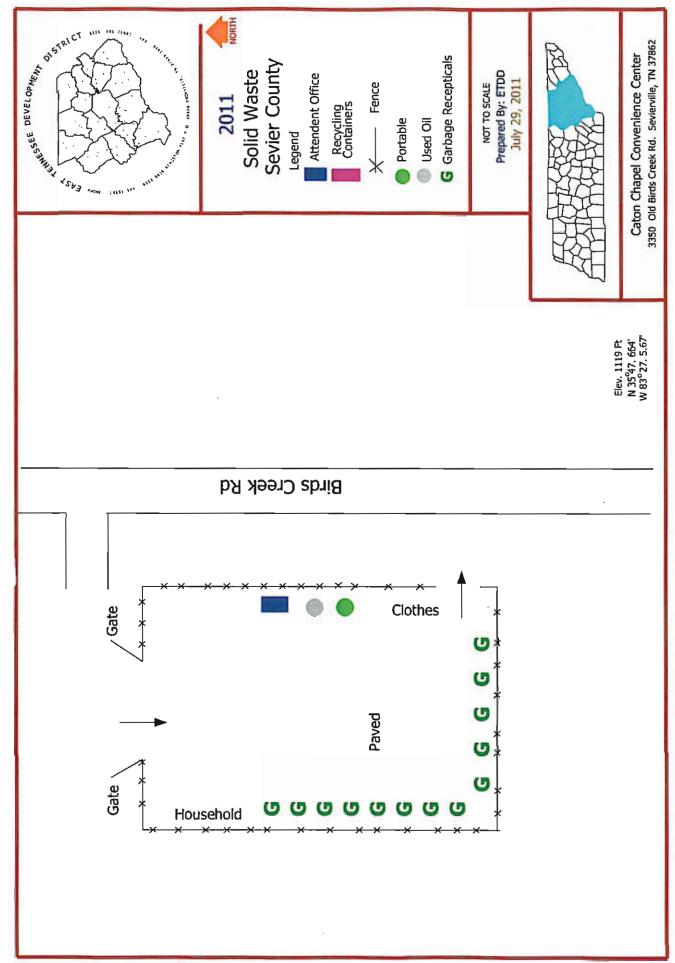






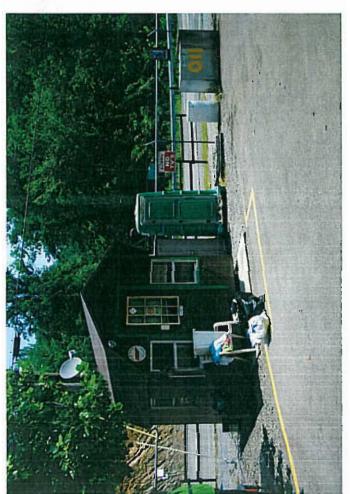










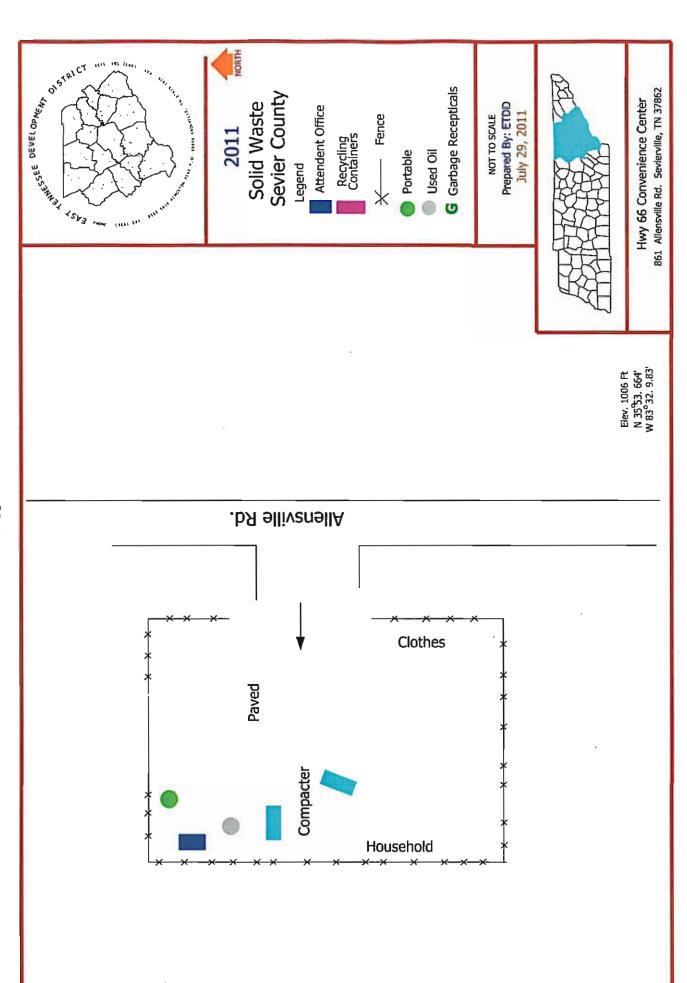










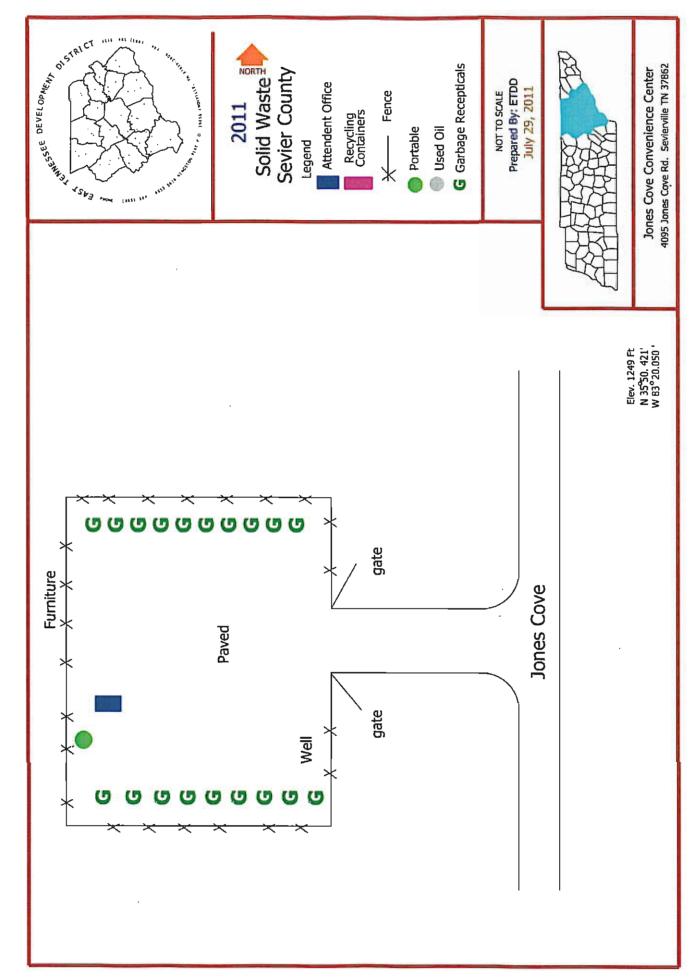






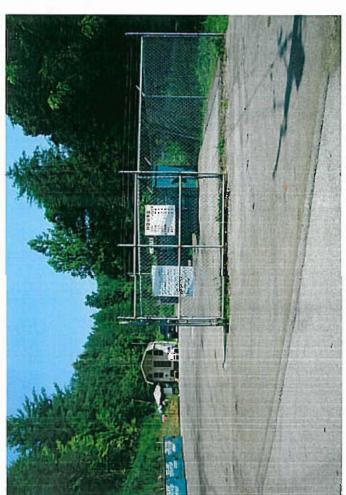




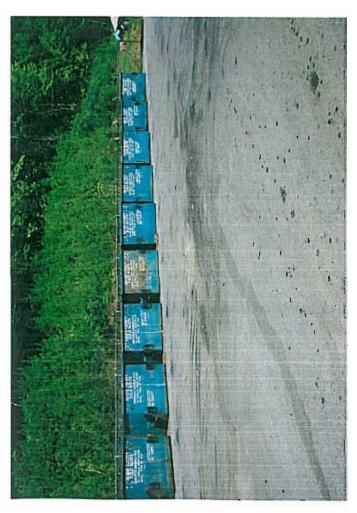




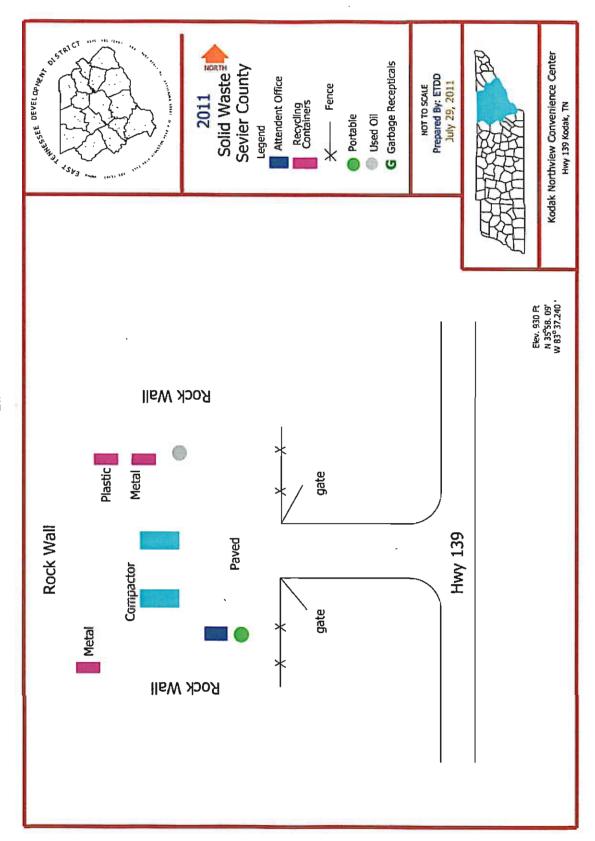


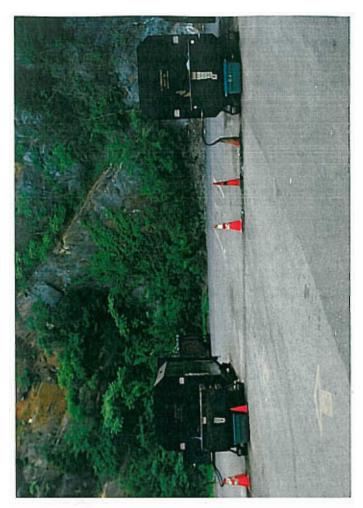






JONES COVE

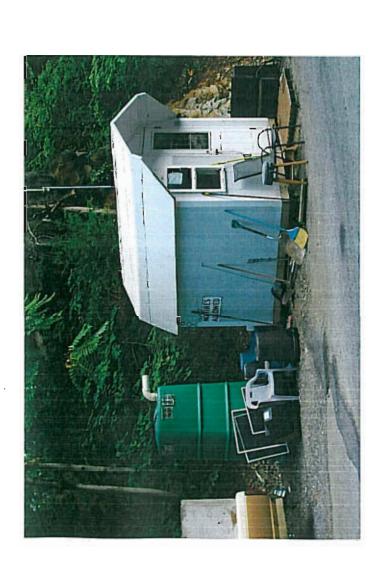


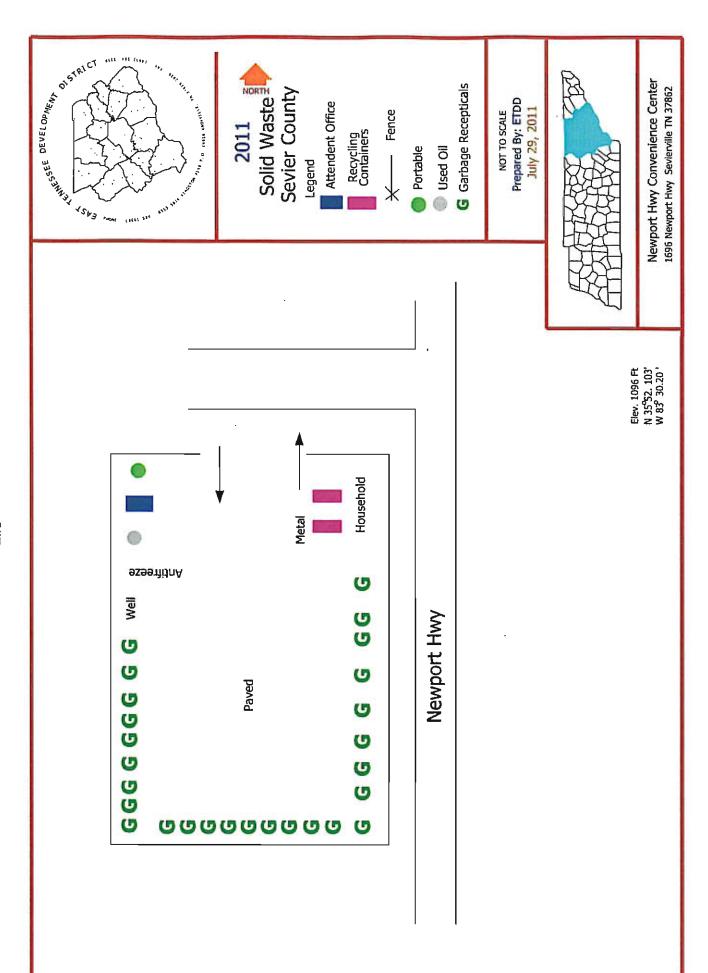












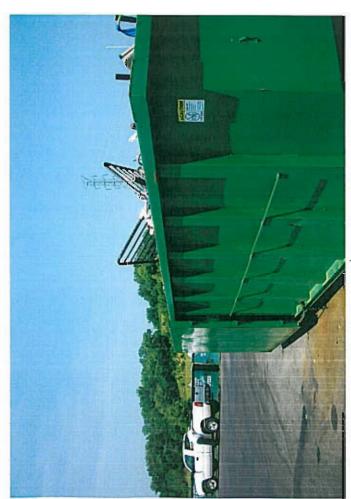












PIGEON FORGE











PITTMAN CENTER

